



How To Reduce Waste in Municipal Government: A Guide To Source Reduction

City of Newton, Massachusetts
May 2005



David B. Cohen, Mayor

Produced By: Department of Public Works
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Department of Environmental Protection
City of Newton – Mass Recycling Initiative Program

City of Newton



David B. Cohen
Mayor

May 2005

Dear Municipal Colleague,

The City of Newton and the Massachusetts Department of Environmental Protection are pleased to have collaborated on this Source Reduction Project, one of many pilot and environmental programs which DEP and the City have partnered on. Newton has received \$1.6 million in technology, technical assistance, and recycling and equipment grants from the DEP. Without their assistance, Newton would have no Source Reduction Plan.

Our source reduction initiative has produced a number of successes and accomplishments, and we are still at the beginning stages. After all, it has taken 20 years to make recycling a part of everyday life, and it will take some time yet before we are comfortable with source reduction.

This manual, a summary of the City of Newton's experience in tackling source reduction, is intended to provide you with guidance in establishing your own source reduction program. We hope you can benefit from both the productive and the frustrating aspects of our efforts.

We thank the many city and school department, residents, and businesses for their support and participation in this project.

Sincerely,

David B. Cohen
Mayor

City of Newton



David B. Cohen
Mayor

May 2005

Dear Reader,

This manual, prepared to provide municipalities with a guide on how to implement a source reduction program, is based upon the City of Newton's challenging, frustrating, and successful year-and-a-half experience in such a venture.

This manual is organized according to program element areas and each section begins with an overview that distills the Newton experience. Following each narrative, we have included a selection of documents that were developed by the City for use in our program. Included at the end of each chapter are listed a few of the many resources available from other sources.

With certainty we can tell you that there is no quick and easy way to successfully establish a source reduction program. It takes time, planning, discussion, a sense of humor, collaboration, and trials and errors. Although it will take some time before source reduction becomes integral to the way we do business and the way we think about the purchase and consumption of goods, we believe that our time was well invested.

There are many to thank, but especially the members of our source reduction team who gave so much time and the many organizations whose materials assisted us along the way. We also wish to thank the Indiana Recycling Coalition and the Indiana Department of Environmental Management for use of their wonderful logo.

We wish you the best of luck!

Sincerely,

Bob Rooney, Commissioner,
Department of Public Works

Elaine Gentile, Director, Environmental Affairs
Department of Public Works

Linda Walden, Project Manager



Background Information

Environmental Leadership

The City of Newton has a long history of leadership in environmental and conservation areas. Over a period of 34 years, the City has developed a comprehensive solid waste management plan which emphasizes source reduction, recycling, composting, household hazardous waste, and waste-to-energy programs. In 1971, Newton became the first community in Massachusetts to begin a voluntary curbside recycling program.

Although Newton had implemented most of its Solid Waste Master Plan, the one outstanding area was source reduction, a fairly new concept to the eastern portion of the country. It became obvious with the State's solid waste plan that solid waste management was going to become more difficult due to rising costs, reduced budgets and growing waste streams. Newton's solid waste contract negotiations would start soon.

Collaboration with Massachusetts Department of Environmental Protection

Newton took a proactive approach and sought funding from the Massachusetts Department of Environmental Protection, the only community to do so. Newton and DEP collaborated to develop a source reduction plan. Because limited staff would hinder implementation, the City again sought assistance from DEP and was awarded a grant – also a first in Massachusetts - co-funded with Newton, to hire a consultant to implement the project which began in September 2002 and was completed in June 2004.

The project was designed to motivate city and school department employees, residents, and businesses to consume and throw away less. The program had the enthusiastic support of city and school leaders and elected officials, a critical piece in the successes achieved. Despite our accomplishments, this is just the beginning of a new way of thinking and behaving that we will hear more about as natural resources continue to be depleted and as traditional waste management methods become more costly and complicated.

The “How To” Manual

This manual condenses the Newton experience to assist other communities who may wish to implement source reduction. This manual concentrates on the Newton experience, describing how the various elements were implemented and also provides a rich collection of resources from the Newton project and from other communities. We hope this manual provides useful and encouraging information and ideas to start a source reduction program in your community.

We wish to thank the many who have gone before us from whom we learned much and borrowed information including, the California Integrated Waste Management Board, the Minnesota Office of Environmental Assistance, the U.S. Department of Environmental Protection and many others.

About Newton: The “Garden City”

The City of Newton, the “Garden City”, eight miles west of Boston, is comprised of 13 villages each of which has a small commercial center. Within an area of 18.33 square miles is a residential population of 77,517 residents (29,950 households). Approximately 49% of land use is residential, 19.6% is open space, and 5.2% is commercial. The median household income is \$59,719 and the median age is 41 years.

Newton is home to five institutions of higher learning: Andover Newton Theological School, Boston College, Hebrew College, Lasell College, and Mount Ida College. There are 30 arts organizations and schools including two orchestras, several choruses, an art center and a theatre group. There are many parks and recreation areas and a lake. The Newton History Museum (formerly Jackson Homestead) has been named as a stop on the Underground Railroad. The non-profit community is comprised of hundreds of organizations of various sizes dealing with a wide array of social and human service issues and needs.

Newton has a “Strong Mayor” form of government with a mayor elected every four years. The legislative branch is comprised of a 24-member Board of Aldermen, 16 of whom are at-large and 8 of whom are ward aldermen. Eight School Committee members are elected every two years and the Mayor serves ex officio. There are 25 municipal departments, 60 municipal buildings and 21 school buildings.

Public school enrollment in the 2002-2003 school year was 11,276 and there are 15 elementary schools, 4 middle schools, and 2 high schools. The pupil expenditure in FY02 was \$10,073. There are over 3,000 businesses, 51% of which are service-oriented and 20% of which are retail.

The City of Newton, with a long history of promoting environmental issues, was the first Massachusetts community to start recycling newspapers, and mandatory recycling was instituted in 1990. Newton has not sent waste to a landfill since 1975 when we began sending trash to the waste-to-energy plant in Millbury. Newton’s annual cost to manage 53,000 tons of trash is \$6 million

Our solid waste management and environmental programs, awarded both locally and nationally, now include: curbside recycling, a permanent household hazardous waste center, and a recycling depot that is open six days a week. Newton currently recycles approximately 46% of the residential solid waste stream which includes paper, cardboard, bottles, cans, glass, plastic and yard waste, computers, televisions, and refrigerators, automotive products, mercury, and textiles – one of the highest in the state.



HOW TO REDUCE WASTE IN MUNICIPAL GOVERNMENT: A Source Reduction Training Manual

Table of Contents

I.	What Is Source Reduction?	7
II.	Why This Grant?	16
III.	Project Organization	45
IV.	Policy – Goals – Timetables	65
V.	Waste Measurement	70
VI.	Publicize the Project	79
VII.	Specific Targets	88
	A. Reducing Paper Waste	
	B. Environmentally Preferable Purchasing (EPP)	
	C. Eliminating Toxic Products	
	D. The Business Community	
	E. High Performance Buildings	
	F. Recycling Re-education Campaign	
VIII.	Accomplishments and Lessons Learned	106



I. What is Source Reduction?

Too Much Trash

We are a nation of consumers generating huge amounts of trash. Between 1950 and 1990, the amount of trash generated by each American increased **from two to four pounds per day**, yet some industrialized countries with similar standards of living generate only two pounds of trash per day per person (see Table 1). In this land of abundant resources, there is little incentive or need to conserve. The recent dramatic growth of disposable items, fueled by our mobile and busy culture, further exacerbates the solid waste problem. The Tides Center notes that solid waste in the United States grew from 87 to 180 million tons between 1950 and 1995. Table 2 compares how several industrialized countries manage solid waste.

Table 1
Household Waste in Various Countries

Country	Household Waste tons/year	Equivalent pounds/person
Australia	10,000,000	1,500
Canada	12,600,000	1,157
Italy	14,041,000	542
Japan	40,225,000	758
Spain	8,028,000	472
Sweden	2,500,000	661
USA	200,000,000	1,930

Table 2
Waste Management Methods in Three Countries

Source	United States	Japan	West Germany
Recycled – Reused	11%	50%	25%
Waste-to-Energy	6%	23%	30%
Landfill/Other	83%	27%	55%
Total	100%	100%	100%

Landfill costs are astronomical, creeping up to \$1 million/acre for siting, building, and operating. Communities don't want landfills and permitting is difficult. Newton made a decision in 1975 to cease landfill operations, and now, all non-recycled materials are incinerated at the Wheelabrator Millbury, Inc. waste-to-energy facility under a 20-year contract which expires in 2008. Table 3 shows the changes in trash and recycling tonnage in the City of Newton. We all make choices about what and how much we buy, where we live and where we work, and how we spend our leisure time. These all have an impact on pollution prevention...it starts with us.

Table 3
City of Newton: Comparison of Tonnage FY91-FY05

Year	Trash	Recycle	Total	%Recy'd	Year	Trash	Recycle	Total	%Recy'd
FY05	22,596	21,419	44,015	48.7%	FY99	29,144	23,099	52,243	44.2%
FY04	32,497	25,829	58,326	44.3%	FY98	29,021	23,384	52,405	44.6%
FY03	31,430	22,484	53,914	41.7%	FY97	28,981	22,907	51,887	44.1%
FY02	30,004	26,189	56,192	46.6%	FY96	27,517	21,614	49,130	44.0%
FY01	29,980	25,382	55,362	45.8%	FY95	29,230	19,308	48,538	39.8%
FY00	30,065	25,862	55,927	46.2%	FY94	28,847	18,653	47,500	39.3%
					FY93	28,588	19,424	48,012	40.5%
					FY92	29,490	17,333	46,823	37.0%
					FY91	31,645	15,594	47,239	33.0%

MILESTONES IN GARBAGE

Year	Event
500 B.C.	First city dump opened in Athens, Greece.
1388	English Parliament bans waste disposal in public waterways and ditches.
1400	Garbage piles up so high outside Paris gates that it interferes with the city defenses.
1690	Paper is made from recycled fibers at a mill near Philadelphia.
1842	A report in England links disease to filthy environmental conditions.
1874	In Nottingham, England, the “destructor” burns garbage and produces electricity. Ten years later, the first American incinerator opens in New York.
1898	The first energy recovery from garbage incineration in the United States started in New York City.
1900's	Pigs are used to get rid of garbage in several cities. One expert said 75 pigs could consume one ton of garbage a day.
1904	First major aluminum recycling plants open in U.S.
1920's	Landfilling becomes most popular way to get rid of garbage.
1959	The first guide to sanitary landfilling is published.
1968	Congress passes the first set of solid waste management laws.
1987	A garbage barge circles Long Island with no place to unload its cargo. Americans perceive a new garbage crisis.
1989	<i>The Solid Waste Dilemma</i> , an Environmental Protection Agency report, advocated recycling as a waste management tool.
Source: Energy Information Administration, U. S. Department of Energy	

The California Integrated Waste Management Board states that waste prevention and reuse, sometimes referred to as source reduction, is “preventing or reducing waste during its production rather than managing it after its generation, as in recycling and disposal.” Preventing waste means using less material to do the same job. Reusing material also is a form of waste prevention because materials go further, thereby producing less overall waste. Waste prevention is accomplished by getting the maximum use from any material before it is recycled or thrown away: replacing disposable materials with reusable materials, eliminating a particular item altogether, and repairing or maintaining equipment so it lasts longer.

Benefits of Source Reduction

Practicing source reduction produces many benefits including:

- ✓ **Increased Efficiency** – Improved organizational performance can result from examining day-to-day transactions – use of materials, why processes are performed, and what products are purchased.
- ✓ **Cost Savings** – Buying and using less, buying more durable products, and reusing existing products result in costs savings.
- ✓ **Environmental Sustainability** – Conscientious purchasing and reuse of materials slows the depletion of natural resources and reduces the environmental impacts of extracting raw materials.
- ✓ **Recycled Product Markets** – Purchasing products of recycled material completes the “recycling loop” by creating markets for those products, thus providing an incentive for manufacturers to produce more environmentally-friendly products.

Recycling Is Not Enough

Recycling is too often the first and last action implemented in a waste reduction program. A community that implements recycling collection programs without implementing the other elements of an integrated system will not achieve the full benefits of waste reduction and resource efficiency. To realize maximum savings from a comprehensive waste reduction program, a community should be proactive and focus on waste prevention and reuse activities.

Materials from Newton's Source Reduction Project

Fact Sheets: The following four fact sheets, compiled using information from a variety of sources, were developed for various audiences.

a) Source Reduction Success Stories

SOURCE REDUCTION SUCCESS STORIES **~~~from communities across the country~~~**

Florida

Lee County

- ACTION: Avoided toxic products, chlorinated solvents, aerosol spray cans.
- SAVINGS: \$16,800/year.

Oregon

Cannon Beach

- ACTION: Converted from electric to natural gas heat; installed thermostat controls; turn settings down when leaving the room.
- SAVINGS: \$422/year; 560 kWh/year (electricity) and 124 therms/year (natural gas).
- ACTION: Check furnace filters often and replace if needed; installed weighted bags in toilet tanks.
- SAVINGS: \$30/year; 7,800 gallons of water/year.

Wisconsin

City of Milwaukee

- ACTION: Purchased a unit to recondition rechargeable batteries.
- SAVINGS: \$274/year; 55 pounds of batteries/year.
- ACTION: Reduced outside night-time lighting levels at office and shops.
- SAVINGS: \$3,211/year; 50,900 kWh/year, plus light bulbs.

Corvallis-Benton Public Library

- ACTION: Installed regulated faucets; regulate water temperature; reduced sprinkler watering cycles
- SAVINGS: \$530/year; 440,000 gallons of water/year.
- ACTION: Replaced incandescent bulbs with LED lamps; retrofit cost \$1,352.
- SAVINGS: \$628/year at full implementation; 8,000 kWh/year.

Tualatin High School

- ACTION: Used mulching mower except on football and baseball fields.
- SAVINGS: \$10,000/year; 37,800 pounds of grass clippings/year.
- ACTION: Installed glazed and double-paned windows, electronic ballasts, advanced fluorescent lights, computer controlled heating and cooling.
- SAVINGS: \$35,000/year; 36% less energy than district's other high school.

Missouri

Jackson County

- ACTION: Purchase of recycled-content or remanufactured products.
- SAVINGS: \$121,000 by purchase of 30% post-consumer recycled paper over virgin paper.

Washington

King County

- ACTION: Created surplus supply program.
- SAVINGS: \$2,600; redistributed items valued at \$1.5 million dollars.

b) Too Much Trash

Fact Sheet: TOO MUCH TRASH

- Each American uses almost 100-foot tall Douglas fir trees in paper and wood products each year.
- The average American consumer uses nearly 20 tons of raw materials each year.
- 20% of the world's people in the highest-income countries account for 86% of the total private consumption expenditures; the poorest a measly 1.3%.
- A child born in the industrial world adds more to consumption and pollution over his or her lifetime than do 30-50 children born in developing countries.
- About 8 million tons of magazines printed each year in the U.S. go to landfill. By recycling half, 12 million cubic yards of landfill space could be saved.
- In Sacramento, CA, 150,000 cubic yards of grass clippings – the equivalent of a 7 story building the size of a football field – are sent to landfill every year.
- Increasing recycling levels from the current 27% to 35% would reduce green house gases equivalent to removing 7 million cars from the road in one year.
- Pulp mills consume more than 12,000 square miles of forest each year; almost half of all trees that are cut end up as paper.
- Recycling one ton of glass saves the equivalent of 10 gallons of oil. Most bottles and jars contain at least 35% recycled glass. Glass never wears out...it can be recycled forever.
- Americans throw away 35 billion aluminum cans per year. If these were recycled, we would save an equivalent of 150 Exxon Valdez oil spills per year.
- Using recycled aluminum beverage cans allows the aluminum can industry to make up to 20 times more cans for the same amount of energy.
- Aluminum can recycling saves 95% of the energy needed to make aluminum from bauxite ore-enough energy to light a city the size of Pittsburg for 6 years.
- In test corn plots, fields treated with compost and fertilizer achieved yields 17% higher than those treated only with fertilizer.
- Americans throw away about 10% of the food they buy at the supermarket. This is equal to dumping 21 million shopping bags full of food into a landfill every year.
- Americans throw out twice as much packaging as they did in 1960. Thirty percent of municipal solid waste is packaging.
- About 44% of junk mail is not opened or read. If a million people stopped their junk mail, we'd save 1.5 million trees

Sources: US EPA Landfill Methane Outreach Program; American Forest and Paper Association; Indiana Department of Education; California Department of Health Services

c) What is Source Reduction?



Too Much Trash

In 2002, Newton residents threw out **56,192 tons of waste**, 46% of which was recycled. The City spends \$6 million per year to manage the waste stream. Americans generate:

- **4 pounds of trash per person per day**, a rate that has doubled since 1950.
- **3.5 billion pounds** of carpet waste yearly – enough to carpet 219 malls.
- **28 billion pounds** of food waste - more sales than McDonald's, Wendy's, and Burger King combined.
- **19 billion pounds** of packaging peanuts would fill 7 Houston Metrodome stadiums.

Recycling is Not Enough!

Through active recycling programs, Newton's recycling rate increased from 39.8% to 46% between 1995 and 2002. But the full benefits of waste management will come through **source reduction**. Source Reduction is the first "R" strategy in solid waste management followed by Reuse and Recycle.



WHERE OUR TRASH GOES...

Newton is one of 36 communities that sends trash to the Wheelabrator Millbury "waste to energy" facility. Up to 1500 tons of waste per day is processed to supply energy to 35,000 homes. The volume of garbage is reduced by 90% -residential ash is buried in a Shrewsbury landfill.

What is Source Reduction?

For many years trash management focus meant recycling. Now, we are shifting to source reduction - preventing or reducing waste during its production rather than managing it after its generation. Source reduction = precycling by:

- **Using** reusable not disposable materials
- **Eliminating** a particular item altogether
- **Repairing** or maintaining equipment
- **Buying** more durable and recycled products

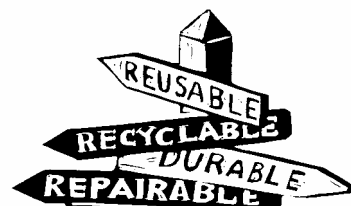
Benefits of Source Reduction

Some of the benefits the City will reap from waste prevention efforts include:

- **Cost Savings** - through more conscientious use of supplies and purchasing and reduced waste management fees.
- **Safer Buildings and Schools** – by eliminating hazardous materials and chemicals and purchasing less products.
- **Resource Conservation** – by reducing use of non-renewable resources, preventing air and water pollution, and preserving habitat.

We Can Do It!

The City of Newton's Source Reduction Project, funded by the Massachusetts Department of Environmental Protection, is working with city and school departments, residents, and businesses to identify ways to reduce waste. For more information contact the Department of Public Works at 796-1000 or see the City of Newton web site at www.ci.newton.ma.us/dpw.



What *You* Can Do

Purchasing Decisions

- Purchase products with minimal packaging and with packaging that is recyclable.
- Buy products in concentrate or bulk form.
- Look for products that are made from recycled material.
- Buy local produce since it requires less packaging and transportation.
- Use reusable or refillable products and those with a longer life span and that are easy to repair.
- Avoid products that contain toxic ingredients.

Reduce, Reuse and Recycle

- Get your name off junk-mail lists.
- Donate usable goods to a charity.
- Use your own cloth or paper bags when shopping.
- Take a reusable mug to work instead of using disposable cups.
- Circulate magazines to friends or neighbors.
- Reuse gift wrap again for a smaller package.
- Use scrap paper that is printed on one side for phone messages or notes.
- Maintain existing equipment and appliances rather than buying new ones.

Household Hazardous Waste and Landscaping

- Buy chemicals only in quantities you will use.
- Use the least toxic product possible.
- Take household hazardous waste to the Recycling Depot for reuse or disposal.
- Compost yard waste and food scraps.
- Grass-cycle - leave grass on the lawn after mowing.
- Keep lawn at 2-3" to conserve water and control weeds.
- Choose low maintenance landscaping.

Be a Strong Consumer

- Let store managers know the products you want them to carry.
- Ask for products that aren't over-packaged or are in returnable containers.
- Let manufacturers know any concerns you have on products or packaging.
- Ask merchants if they will take back items such as oil, paint, appliances, and packaging.

- waste that is not created does not need to be managed-



Sources: City of Newton [Green Pages](#); Minnesota Office of Environmental Assistance; U. S. Environmental Protection Agency; Congressional Research Services

d) Landfills and Incinerators

PROBLEMS WITH LANDFILLS and INCINERATORS

Although it may take thousands of years, it is inevitable that land will eventually run out. Incinerators, a popular alternative to landfills, reduce the quantity of trash, but create other problems.

LANDFILLS

1. **LEAKAGE** "...82% of surveyed landfill cells had leaks according to [Leak Location Services, Inc. \(LLSI\)](#). All landfills eventually fail and leak leachate into ground water. Plastic landfill liners and plastic pipes which allow chemicals and gases to pass through their membranes, become brittle and breakdown.
2. **WATER and AIR CONTAMINATION:** Because the federal government allows household and industrial hazardous waste into landfills, hazardous substances contaminate water and air.
3. **REMEDATION:** Landfills built in the last 60 years require remediation to assure protection from the disposal of highly toxic chemicals that were manufactured and sold since the 1940's.
4. **LOCATION:** Landfills are typically located next to large bodies of water (i.e., rivers, lakes, bays, etc), making leakage detection and remediation (clean-up) extremely difficult.
5. **LANDFILL COVER:** The EPA allows the use of toxic incinerator ash as landfill cover, instead of soil as the public was originally told.
6. **RECYCLING LEACHATE BACK THROUGH A LANDFILL:** Pumping leachate back through a landfill causes increased decomposition and it seems logical that it would also create a super toxic leachate. In addition, it would most likely accelerate the decomposition of the liner itself, thereby allowing leachate to contaminate ground water at an increased rate.

WASTE -to- ENERGY INCINERATION

Waste-to-energy incineration burns waste in a controlled, high temperature (1,800 – 2,200 degrees F) specialized furnace. Heat created from incinerating the waste is used to produce energy in the form of electricity or steam. Incineration results in up to a 90-percent decrease in the volume of waste, meaning less waste must be landfilled.

Municipal waste incinerators are the greatest source of dioxin. named as "known human carcinogens" by the World Health Organization in 1995. Approximately 25-30% by weight of what is burned remains as ash – some of which will be hazardous – and which will have to be disposed of using landfill or other methods. Incineration doesn't solve the waste problem – it just makes it more dangerous by generating dangerous emissions and toxic ash.

One recent analysis identified 192 volatile organic compounds being emitted by a solid waste incinerator. Several PAHs and dioxins and furans are known or suspected human carcinogens. Now a series of reports from around the world have cast even more doubt on the safety of solid waste incineration, further dimming the industry's prospects in the U.S.

Sources: Zero Waste America; Rachel's Environment & Health News #592 (4/2/98)

Source Reduction Resources: The following are just some of the many organizations and resources dealing with source reduction.

Source Reduction Organizations and Resources

Organization

Air and Waste Management Association
Alameda County Source Reduction and Recycling Board
Bureau of Waste Prevention
California Integrated Waste Management Board
Center for a New American Dream
City of Chicago
Commonwealth of Massachusetts, Operational Services Division
Connecticut Department of Environmental Protection
Cornell Center for the Environment
Cutting Paper
Energy Star Small Business Program
Florida Department of Environmental Protection
Environmental Protection Agency
Global Environmental Management Initiative
GreenBiz
Green Seal
Illinois Waste Management and Research Center
INFORM
King County, Washington
Minnesota Office of Environmental Assistance
Montgomery County, Maryland
National Pollution Prevention Roundtable
National Recycling Coalition
National Waste Prevention Coalition
New Hampshire Department of Environmental Services
New York Department of Environmental Conservation
Northeast Business Environmental Network
Northeast Recycling Council
Northeast Waste Management Officials Assn.
Oregon Department of Environmental Quality
Pennsylvania Department of Environmental Protection
Pollution Prevention Resource Exchange
Pollution Prevention Resources for the State of Texas
Resource Center on Business, Environment and the Bottom Line
San Diego, California
Santa Monica, California
Small Business Administration Pollution Control
Solid Waste Authority of Central Ohio
Sustainable Step New England
Texas Natural Resources Conservation Commission
Toxics Use Reduction Institute
Virginia Department of Environmental Quality
WasteCap of Massachusetts
WasteWise
WaterWiser
Environmental Quotations

Web Site

www.awma.org
www.stopwaste.org
www.state.ma.us/dep/bwp
www.ciwmb.ca.gov
www.newdream.org
www.cityofchicago.org/Env/
www.state.ma.us/osd/enviro
dep.state.ct.us
www.cfe.cornell.edu
eetd.lbl.gov/paper
www.epa.gov/smallbiz
www.dep.state.fl.us/waste
www.epa.gov
www.gemi.org
www.GreenBiz.com
www.greenseal.org
www.wmrc.uiuc.edu
www.informinc.org
www.metrokc.gov
www.moea.state.mn.us
www.montgomerycountymd.gov
www.p2.org
www.nrc-recycle.org
dnr.metrokc.gov/swd/nwpc
www.des.state.nh.us
www.dec.state.ny.us
www.nben.org
www.nerc.org
www.newmoa.org
www.deq.state.or.us
www.dep.state.pa.us
www.p2rx.org
www.p2plan.org
www.greenbiz.com
www.sannet.gov/environmental-services
www.santa-monica.org/environment
www.sbaonline.sba.gov/financing/frpollute.html
www.swaco.org
www.ssne.org
www.tnrcc.state.tx.us
www.turi.org
www.deq.state.va.us
www.wastecap.org
www.epa.gov/wastewise
www.waterwiser.org
www.stthomas.edu/recycle/quote.htm

For More Information:

- Source Reduction Techniques for Local Governments, Virginia Department of Environmental Quality at www.deq.virginia.gov
- Citizen's Agenda for Zero Waste at www.grn.org/zerowaste/community/activist/citizens_agenda_4_zw.html
- Inspiration: Thirty Things You Can Do In Your Community, World Wildlife Fund and Center for a New American Dream at www.ibuydifferent.org/takeaction/action_ideas.pdf
- Terms and Definitions, Waste Reduction at Work, California Integrated Waste Management Board at www.ciwmb.ca.gov/WPW/Define.html
- Primer on Solid Waste at www.eia.doe.gov/kids/energyfacts
- Use Less Stuff Program at www.deq.state.ok.us
- "More Fun, Less Stuff: The Challenges and Rewards of a New American Dream" (video), Center for a New American Dream, www.newdream.org
- Source Reduction Now, Minnesota Office of Environmental Affairs at www.moea.state.mn.us
- Source Reduction and Your Community: An Introduction to EPA's Planning Packet, U.S. Environmental Protection Agency at www.epa.gov/osw
- Waste Prevention Forum e-newsletter at www.METROKC.com
- Maximizing Profits for Business and the Environment, Florida Pollution Prevention Program at www.dep.state.fl.us
- "Benefits of Waste Reduction and the IWM Hierarchy" from Establishing a Waste Reduction Program at Work, California Integrated Waste Management Board at www.ciwmb.gov



II. Why This Grant

Although the City of Newton had a comprehensive Solid Waste program and had made great strides over the years in implementing alternatives to trash disposal through its recycling and household hazardous waste programs, source reduction, the next logical step, had not been adopted as an institutional approach. A source reduction planning study had been completed, however financial assistance and staffing were needed for implementation. More importantly, was the community ready for it?

The City received a grant from the Massachusetts Department of Environmental Protection and, in conjunction with City funds, the project commenced in September of 2002 with the hiring of a consultant and ended in the Fall of 2004. The consultant was provided with workspace in the Department of Public Works which offered an in-house base of operations, created an “inside” identity, and facilitated working with multiple departments and personnel.

Please note that the original consultant report, Waste Prevention Policy and Program, which is included in this chapter is quite long. Several elements of the Schedule of Deliverables, which guided the work of the project, were changed along the way to better accommodate Newton’s workplace, calendar and limitations. An overall project plan or work document is important as a guide to make sure that the organization’s goals are being accomplished and that the project is moving forward, but it must be flexible and able to adapt and change.

Materials from Newton’s Source Reduction Project

1. Waste Prevention Policy and Program: This report, included here in its entirety although slightly altered to reduce space, was prepared for the City by Science Applications International Corporation in June 2001. This report was the catalyst for the decision to implement a source reduction program.

Waste Prevention Policy and Program

City of Newton, Massachusetts

EXECUTIVE SUMMARY

The City of Newton, Massachusetts has maintained a long-term commitment to waste prevention and recycling. In 1971, Newton implemented the first recycling program in the Commonwealth of Massachusetts. In 1991, the City’s recycling program became mandatory. Newton’s programs have received national recognition. Today, the City recycles 46% of its waste stream, as generated by residents, and waste from 22 school buildings and 12 municipal facilities. Newton has set their recycling rate goal of over 50%.

Newton collects approximately 26,000 tons of recyclables through its curbside program. Curbside collection includes the commodities

ES-1 Newton Recycling Program:

A. Curbside Pick-up

Mixed paper
Plastic containers, 1-7; except expanded polystyrene
All glass bottles & jars, including caps & lids
Metal cans, including paint & aerosol containers
Beverage cartons including aseptic
Mixed paper
Corrugated cardboard (waxed/non-waxed)
Refrigerators & air conditioners (special pick-up)
Leaves and yard waste

B. Recycling Depot Commodities

Used oil
Universal wastes (e.g., fluorescent lamps, mercury thermometers, thermostats, switches, batteries)
CRTs & televisions
White goods
Lead acid batteries
Scrap metal
Paint
Textiles
Books
Leaves & yard waste

identified in Table ES-1. In addition to the recyclables collected in the curbside program, City residents may deliver items to the recycling depot as specified. The City also encourages businesses to drop-off white paper for recycling, offers innovative programs such as its fever thermometer exchange initiative, and provides monthly household hazardous waste collection days at the recycling depot.

In addition the City implemented in the late 1980s a Buy Recycled Policy under which the City specified a 10% price preference. The policy was recently amended to include a requirement to purchase white paper that contains a minimum of 30% post-consumer recycled content. The City also accesses the Commonwealth's Environmentally Preferable Purchasing state contracts and provides on-going training opportunities for purchasing agents. In addition, Newton hosted a seminar last year to introduce and reinforce environmentally preferable purchasing strategies for Municipal Custodians.

The level of commitment of the City of Newton to effective and efficient material use and waste management is further demonstrated by the Mayor's appointment of a Solid Waste Commission. This Commission helps to focus the City's efforts to address solid waste issues and serves to highlight the importance that the City places on both waste prevention and recycling. The Commission and City of Newton staff established the Household Hazardous Waste Collection Program, a monthly program that has led the City to consider creating a permanent facility to manage hazardous waste from households. It also implemented programs to promote the reuse of unwanted municipal equipment, under which the City offers unwanted equipment to the public.

Recognizing the value of these and related initiatives, to the enhancement of programs and services City-wide, Newton applied to the Massachusetts Department of Environmental Protection for a grant to pursue options for the development of a waste reduction policy and program. This report, based on meetings and conversations with Newton City officials and representatives of the Massachusetts Department of Environmental Protection, presents the results of this effort. This report is organized in six sections as follows:

Section 1: Newton Citywide Waste Prevention Policy: This section presents a Statement of Purpose, a Statement of Policy, definitions of key terms, guidance for policy implementation, recommended reporting requirements and related information.

Section 2: Waste Prevention Program Plan: This section presents background information concerning the benefits of implementing a City-wide waste prevention program, defines responsibilities for key personnel in program implementation, provides sample standardized forms for measurement and tracking, and presents an action plan summary. Finally, because paper waste prevention is such a high priority for the City, this section provides detailed guidance for the performance of an office paper reduction assessment and related waste reduction plan recommendations, to illustrate the overall assessment and reduction planning process.

Section 3: Environmentally Preferable Purchasing Program Plan: This section presents background information concerning the environmentally preferable purchasing program goals and targets, defines roles and responsibilities for key personnel, provides guidelines for City departments and schools and provides an action plan summary.

Section 4: Waste Prevention Program Plan for Vehicle and Maintenance Operations: This section provides background information concerning opportunities and defines participant responsibilities. It then provides detailed recommendations for preventing waste and enhancing recycling.

Section 5: Environmental Outreach Plan: This section presents background and context for the outreach plan, provides a detailed outline for a waste prevention education packet, recommends strategies for working with local businesses, presents a blueprint for web-based guidance and provides a detailed presentation of waste reduction tips suitable for residents. These tips are presented to illustrate potential web resource content for an envisioned Newton waste prevention web site. This section also provides an action plan summary.

Section 6: Resources: This section provides a listing of recommended resources to consult for further information.

TABLE OF CONTENTS

	PAGE NUMBER
SECTION 1: NEWTON CITYWIDE WASTE PREVENTION POLICY	19
1.0 Statement of Policy	
2.0 Definitions	
3.0 Policy Implementation	
4.0 Precedence	
5.0 Application	
6.0 Reports	
7.0 Effective dates	
SECTION 2: WASTE PREVENTION PROGRAM PLAN	21
Introduction	
Background	
City Responsibilities	
Waste Prevention Manager Responsibilities	
Department Waste Prevention Coordinator Responsibilities	
A Program Plan for Reducing Paper Waste	
SECTION 3: ENVIRONMENTALLY PREFERABLE PURCHASING PLAN	28
Background	
Purchasing Department Role and Responsibilities	
Suggested Program Guidelines for City Departments and Schools	
SECTION 4: WASTE PREVENTION PLAN FOR MAINTENANCE OPERATIONS	30
Background	
Maintenance Activity Manager Responsibilities	
Maintenance Staff Responsibilities	
Recommendations for Preventing Waste and Enhancing Recycling	
SECTION 5: ENVIRONMENTAL OUTREACH PLAN	35
Background	
Outline for Waste Prevention Education Packet	
Coordinating with Local Businesses	
Web-based Resources	
Waste Prevention Tips for Residents	
Annual Award and Recognition Program	
Other Outreach Opportunities	
Summary	
SECTION 6: WASTE PREVENTION RESOURCES	40

SECTION 1: NEWTON CITYWIDE WASTE PREVENTION POLICY

Statement of Purpose

The City of Newton (including municipal departments and the public schools) supports the development and implementation of a comprehensive waste prevention program to preserve natural resources, reduce solid and hazardous waste, and conserve energy.

The City of Newton shall establish quantifiable waste prevention goals and targets and shall reduce the quantity and toxicity of wastes generated by all City operations, municipal departments, and public schools.

The City of Newton shall purchase and use environmentally preferable products and services, as defined in its Environmentally Preferable Purchasing Policy, to strengthen markets for materials collected in the City of Newton's recycling collection system, to reduce waste, and to reduce packaging waste.

The City of Newton shall reduce the number of products purchased that contain toxic chemicals.

The City of Newton shall engage in community outreach campaigns to encourage residents and businesses to reduce the quantity and toxicity of their waste streams.

1.0 Statement of Policy

It is the policy of the City of Newton to:

- 1.1 review practices and procedures for all municipal and school operations to identify opportunities to reduce, at its source, the quantity of waste generated.
- 1.2 purchase waste preventing products and/or recycled products containing the highest amount of post-consumer material practicable or, when post-consumer material is impracticable for a specific type of product, containing substantial amounts of recovered material. Such products must meet reasonable performance standards, be available at a reasonable price and be available within a reasonable time.
- 1.3 purchase, when practicable, products and services that do not contain any of the harmful constituents targeted by the U.S. Environmental Protection Agency for elimination. These constituents are identified in Attachment 1 to this policy.
- 1.4 ensure that all equipment purchased, leased or rented shall be compatible with the waste prevention and recycled product standards. The City of Newton shall require contractors to implement waste preventing practices when providing contracted products and services.
- 1.5 promote use of products that reduce waste and contain recycled content whenever feasible within the all departments, schools, and to the general public.
- 1.6 develop and encourage community-based waste prevention initiatives and support voluntary efforts by local businesses to implement practices to reduce waste.

2.0 Definitions

- 2.1 City of Newton refers to all City offices and departments throughout the municipality including public schools.
- 2.2 "Contractor" means any person, group of persons, business, consultant, designing architect, association, partnership, corporation, supplier, vendor or other entity that has a contract with the City of Newton, or serves in a subcontracting capacity with an entity having a contract with the City of Newton, for the provision of goods or services.
- 2.3 "Environmentally Preferable Product" means a product that results in a net reduction in the generation of waste compared to the previous or alternate version and includes durable, reusable and remanufactured products; products with no, or reduced, toxic constituents; and products marketed with no, or reduced, packaging.

- 2.4 "Post-consumer Material" means a finished material that would normally be disposed of as a solid waste, having completed its life cycle as a consumer item, and does not include manufacturing or converting wastes.
- 2.5 "Pre-consumer Material" means material or by-products generated after manufacture of a product is completed but before the product reaches the end-use consumer. Pre-consumer material does not include mill and manufacturing trim, scrap, or broke which is generated at a manufacturing site and commonly reused on-site in the same or another manufacturing process.
- 2.6 "Recovered Material" means fragments of products or finished products of a manufacturing process, which has converted a resource into a commodity of real economic value, and includes pre-consumer and post-consumer material, but does not include excess resources of the manufacturing process.
- 2.7 "Recycled Content" means the percentage of recovered material, including pre-consumer and post-consumer materials, in a product.
- 2.8 "Recycled Content Standards" means the minimum or maximum level of recovered material and/or post-consumer material necessary for products to qualify as "recycled products," as established by the City of Newton
- 2.9 "Recyclable" means any product or package that can be diverted from the solid waste stream for recycling via a program (curbside or drop-off) operated by the City of Newton or other entity.
- 2.10 "Recycled Product" means a product that meets the City of Newton's recycled content policy objectives for post-consumer, pre-consumer and recovered material.
- 2.11 "Remanufactured Product" means any product diverted from the supply of discarded materials by refurbishing and marketing said product without substantial change to its original form.
- 2.12 "Reused Product" means any product designed to be used many times for the same or other purposes without additional processing except for specific requirements such as cleaning, painting or minor repairs.

3.0 Policy Implementation

- 3.1 The Mayor or authorized representative shall, in cooperation with City Officials and any other relevant departments, develop administrative guidelines to implement this policy.
- 3.2 The Mayor or authorized representative shall establish the position(s) of waste prevention coordinators within all departments and the schools. The waste prevention coordinators shall be selected by each department and school
- 3.3 The City of Newton's Waste Prevention Coordinators shall be charged with identifying and implementing waste preventing practices within their areas of responsibility.
- 3.4 The Waste Prevention Coordinators shall be:
- trained in conducting waste audits,
 - required to establish waste prevention goals for their department,
 - required to manage an audit of the storage, use and disposal of hazardous products, and
 - required to file annual, written reports of waste prevention plans and progress toward meeting goals for each department.
- 3.5 The City of Newton's purchasing department shall ensure that purchasing documents, specifications, and contracting procedures do not discriminate against waste preventing, recycled or recyclable products and packaging.
- 3.6 The City of Newton's purchasing department shall establish recycled content standards to guide the purchase of recycled content products and shall be authorized to set those standards to meet the objectives of this policy. The decision to change any recycled content standard shall be substantiated in an annual report.
- 3.7 The City of Newton's purchasing department shall be authorized to prohibit the purchase of products that contain any of the toxic constituents provided in Attachment 1 to this policy. The purchasing department shall maintain, and update annually, a list of products exempted from this policy.

- 3.8 The City's Purchasing Department shall be authorized to participate in, and encourage others to participate in, cooperative purchasing agreements.
- 3.9 The Mayor shall designate departments responsible for designing and implementing waste prevention outreach campaigns for the residential and business communities.

4.0 Precedence

- 4.1 In the evaluation of waste prevention opportunities or the selection of products, the following hierarchy shall be applied:
- Reduction in quantity, volume, weight or toxicity;
 - Reusability;
 - Recycled content.
- Waste prevention program activities also shall include recycling. Products shall be evaluated for recyclability.

5.0 Application

- 5.1 This policy applies to all City of Newton operations, offices, schools, vendors, and contractors.

6.0 Reports

- 6.1 On an annual basis, Waste Prevention Coordinators shall report to the Mayor concerning each Department's progress in waste prevention. The reports shall be presented on standardized forms to streamline reporting and data management and shall be filed electronically to reduce paperwork. They shall address reduction goals, progress toward goals, program descriptions, and any areas where additional resources may be necessary to achieve waste prevention goals. (A sample reporting form is provided in Section 2.)
- 6.2 The purchasing department shall report on waste preventing purchases and recycled content purchases, annual dollar expenditures, percentage change from previous years, percentage of total purchasing budget, total savings or cost for using recycled or waste preventing purchases, and the number of product types bought in each category. The annual report shall also include identification and discussion of instances in which this policy has been waived or found impracticable, a discussion of barriers to the procurement of recycled products, and any instances when recycled content standards were adjusted.

7.0 Effective dates

- 7.1 This policy shall take effect on [date].
- 7.2 The Mayor shall issue implementation guidelines within one year following the effective date of this policy.

SECTION 2: WASTE PREVENTION PROGRAM PLAN

Introduction

This section of the City of Newton Waste Prevention Policy and Program provides information to help put the policies in action. This section includes the following subsections:

- background information concerning the direct benefits of establishing and maintaining a waste reduction plan;
- explicit direction concerning the specific responsibilities of the plan managers and coordinators;
- examples of progress reporting and waste reduction measurement forms for use in gauging progress toward the achievement of goals; and finally, because paper waste prevention is such a high priority for the City, this section provides
- detailed guidance for the performance of an office paper reduction assessment and related waste reduction plan recommendations, to illustrate the overall assessment and reduction planning process.

Background

The City of Newton defines waste prevention as those activities that eliminate or reduce the quantity or the toxicity of the wastestream. Waste preventing activities may include:

- Buying environmentally preferable products and services.

- Specifying items that have less packaging.
- Specifying materials that are less toxic than alternative products and packaging.
- Reducing disposal of organics, such as food and yard waste, through on-site composting and grasscycling.

The benefits of establishing a waste prevention program include:

Cost Savings - Waste prevention can save the City of Newton money. Often changes in operating, purchasing, transportation, warehousing and waste management practices and policies result in less waste.

Safer Work Environment - Eliminating hazardous materials from the workplace by purchasing less- or non-toxic products reduces the potential for worker exposure to hazardous chemicals and ensures a healthier and safer work environment.

Increased Awareness - Increased awareness of waste prevention and waste preventing products may inspire increased interest in environmental issues and worker identification and pursuit of additional opportunities to prevent waste.

Resource Conservation - Buying environmentally preferable products and products manufactured from recycled materials reduces reliance on non-renewable natural resources. Buying recycled content products reinforces stable markets for recycled materials, enhancing their competitive position in the marketplace, reducing production and marketing costs and stimulating related business and employment opportunities.

City Responsibilities

The City of Newton shall establish the necessary organizational structure, and set targets and goals to ensure effective implementation of the waste prevention program plan. Specifically, the City of Newton shall:

- Distribute the City's Waste Prevention Policy, signed by the Mayor, to all municipal and school staff.
- Appoint a staff person, a Waste Prevention Manager, to manage the City's waste prevention efforts. This staff member will serve as the liaison between the Mayor's office and the departmental and public school Waste Prevention Coordinators (see below).
- Direct each City department and the public schools to appoint a Waste Prevention Coordinator.
- Establish and publish waste prevention goals and provide a copy of the City's Waste Prevention Plan to all Waste Prevention Coordinators.
- Direct each department to establish a waste prevention program and targets to meet these goals.
- Establish a budget for waste preventing equipment and services and provide funding and other resources necessary to develop a successful waste prevention program.
- Direct each City department and the public schools to complete a waste prevention assessment by December 2002.
- Publish an annual report highlighting the waste prevention program successes and establishing waste prevention targets for the upcoming year.
- Recognize outstanding waste prevention efforts and provide awards.
- Promote the City's waste prevention program.

Waste Prevention Manager Responsibilities

The Waste Prevention Manager is essential to the success of the program and will perform the following duties:

- Maintain a contact list of Waste Prevention Coordinators and distribute it as requested.
- Schedule and host a kick-off meeting with the Waste Prevention Coordinators.
- Ensure effective communication among all City staff involved in waste prevention and environmentally preferable purchasing programs.
- Lead the development of waste assessment information collection forms and waste prevention program progress reporting forms.
- Participate in waste prevention activities at department and school levels, as requested by Waste Prevention Coordinators.
- Compile all data and develop an annual waste prevention report for signature by the Mayor.
- Promote the City's waste prevention program.
- Develop and offer waste prevention training programs for Waste Prevention Coordinators. Effective training programs can enhance the efficiency and consistency of waste reduction efforts as described in greater detail below:

Training

Training is key to establishing a successful waste prevention program for the City of Newton. The establishment and maintenance of a successful waste prevention program and training initiative further depends on the commitment and ongoing support of top City Officials and Department Administrators. Among the elements of an effective training program are the following:

- At the program's initiation, all departmental waste prevention coordinators receive training in waste prevention, enhanced recycling, and environmentally preferable purchasing.
- Right-to-know training is provided for appropriate personnel.
- Waste prevention coordinators, in turn, devise and implement outreach measures to ensure that all department staff are aware of and understand the department's waste prevention initiatives and that all personnel understand their respective roles in the success of waste preventing programs.
- City Officials ensure that employees from all departments and the public schools are involved in the decision-making process. Employees are much more likely to participate in a program when they feel some ownership.
- Provision of waste prevention training for City employees so they understand the program and know how to do their part.
- Provision of training in various forms, including seminars, workshops, training packets and fact sheets.
- Distribution of information explaining why the initiative was implemented, describing the benefits to the City of Newton, and presenting basic "how to" information.
- Establishment of mechanisms for City staff to offer feedback on the waste prevention program and its progress.

Technical Assistance

The City's Waste Prevention Manager shall provide technical assistance and participate in on-site waste prevention assessments as requested by City department and public school waste prevention coordinators.

Reporting

The City's Waste Prevention Manager shall develop a user-friendly reporting format for Waste Prevention Coordinators to record their department's assessment results and to use to measure progress in meeting waste prevention goals. The following sample provides the City of Newton a suggested format that may be used to guide the development of waste assessment and reporting forms tailored to meet the City's needs.

Sample Waste Assessment/Progress Measurement Form

Purpose:

Completing this form provides an overview of the quantity of waste and recyclables and types of materials generated throughout the department. The purpose of this form is to gather the information required to understand the overall waste generation and recycling patterns of the entire department.

Department: _____ **Assessment Date:** _____

Recyclables and Waste Generation Data:

Gather data regarding the collection containers used at the department. Depending on the collection process, complete the appropriate fields for each container. This data will be used to calculate the monthly waste generation.

Dumpster or Compactor	Capacity (cubic yards)	Frequency of Collection (per month)	Estimate how full the container is when emptied	Trash or Recyclables
<i>Example: Dumpster</i>	<i>12 cubic yard</i>	<i>4 times per month</i>	<i>90%</i>	<i>Trash</i>

Place a check next to all materials generated and estimate the percentage of each major material type in the total waste stream

Material Type	Percentage of Waste Stream	Percent of this material recycled
Aluminum		
Corrugated Cardboard		
Electronic Equipment		
Food Scraps		
Food Packaging		
Glass		
Metal		
Newspaper		
Paper		
Paperboard		
Plastic Film		
Plastic Containers		
Styrofoam Containers/Packaging		
Wood		
Other		
Other		

For all materials regularly separated for recycling provide quantities collected per month:

Material	Quantity per month
Paper	
Mixed Containers	
Wood	
Metals	
Electronic Equipment	
Other	

Complete when conducting waste prevention follow-up reviews.

- 1) Compare this data to data collected on previous assessment and note any changes in the quantity of waste and recyclables.
- 2) Describe any waste prevention initiatives, such as changes in products or services, implemented by the department. Estimate the quantity of waste eliminated as a result of the waste prevention initiatives
- 3) Describe any barriers to implementing waste preventing practices.

Using information submitted by the Waste Prevention Coordinators, the City's Waste Prevention Manager shall compile all data and prepare an annual report on the City's overall progress in meeting targets and achieving its waste prevention goals.

Department Waste Prevention Coordinator Responsibilities

The Waste Prevention Coordinators are responsible for day-to-day waste reduction plan implementation and will perform the following duties:

- Participate in waste prevention training.
- Attend waste prevention meetings and assist in the development of waste assessment information collection forms and progress reporting format.
- Coordinate all department-level waste prevention activities.
- Conduct on-site waste prevention assessments.
- Identify waste prevention opportunities.
- Work with all department staff to identify wastes that can be eliminated or reduced.
- Conduct research to identify alternative products.
- Test substitute products.
- Coordinate with purchasing department to switch to environmentally preferable products and services.
- Provide data and information on waste prevention progress to the City's Waste Prevention Manager.

Developing a clear perspective on major waste generating activities and waste sources as well as promising waste prevention opportunities is essential to performing the waste coordinator role. Thus the waste prevention assessment is a particularly important aspect of the coordinator's role, as described in greater detail below:

Conducting a Waste Prevention Assessment

Waste prevention begins with a waste prevention opportunity assessment. A waste assessment documents, for staff, the nature and extent of baseline waste generation and disposal activities. A waste assessment considers all sources of waste. It begins with purchasing decisions and finishes with waste disposal, examining transportation, storage, and operations and activities throughout the department.

During the assessment, the Waste Prevention Coordinators shall work with staff from throughout the department to track all materials purchased, identify how they are used, and how they are managed when they are no longer needed. In conducting the assessment, the Waste Prevention Coordinator shall:

- 1) Conduct a walk-through of the operation, paying special attention to waste generating practices and storage of hazardous products, and
- 2) Examine records that document what the department buys, uses, and discards.

Department Walk-Through

During the walk-through, the Waste Prevention Coordinator shall consider the specific activities of each staff member in the department, inventory the products and services they use, review how the products are used, characterize the wastes that are generated, and determine how these wastes are managed. A professional experienced in the proper use, storage and disposal of hazardous products shall accompany the Waste Prevention Coordinator during the walk-through of those departments managing such products.

During the walk-through, the Coordinator will:

- ✓ Observe the layout of each operation or area.
- ✓ Observe waste-producing activities and equipment.
- ✓ Identify the types and relative amounts of waste generated.
- ✓ Talk to staff about how they do their jobs.
- ✓ Assess the efficiency of current waste prevention and recycling efforts.
- ✓ Identify space that could be used for storing bulk purchases, reusable packaging, and recyclables.
- ✓ Identify opportunities to purchase and use environmentally preferable products or materials.
- ✓ Evaluate the appropriateness of the use, storage and disposal of hazardous products.

Examining Department Records

Based on observations during the walk-through, the Coordinator shall identify potential waste prevention targets for the department to address. These targets are waste materials that are:

- 1) generated in large quantities,
- 2) used inefficiently, and/or

- 3) considered easiest to eliminate, reduce or recycle, and
- 4) include those for which a less toxic alternative is readily available.

Once the targets are identified, the Coordinator shall review department records to determine the sources and costs of products, quantities of material recycled and other information that can help identify priority targets and help establish baseline quantities and profiles for materials of concern. In support of this effort, the Coordinator shall review the following:

- ✓ purchasing records;
- ✓ records concerning the types and quantities of products and materials the department stores on site;
- ✓ equipment service contracts, maintenance and operating logs, and repair invoices
- ✓ cleaning contracts; and
- ✓ records of material types and quantities recycled or discarded as waste.

Using this information, the Waste Prevention Coordinator can finalize waste prevention targets for the department. The process is most efficient when the Waste Prevention Coordinator develops a list of questions and information requests prior to visiting the department to conduct the waste assessment. The guidance concerning paper waste, as presented at the end of this section, illustrates the process.

Select the Wastes Targeted for Reduction and Elimination

Each City department shall identify waste streams of concern for that department and based on the activities of that department. It shall be the responsibility of the department management and the Waste Prevention Coordinator to develop an implementation plan to eliminate or reduce the target wastes.

Tracking Progress

Tracking and measuring the success of your waste prevention program is critical to program success. By tracking the impact of each opportunity implemented and measuring reduction in waste generation or disposal the department shall determine the overall effectiveness of the waste prevention program and identify areas where improvement is needed.

Tracking shall include collecting data before, during and after waste prevention activities are implemented so the program's impact can be measured. For example, the Coordinator shall track waste disposal quantities before and after program implementation. Monitoring the degree to which less waste is discarded following program implementation will reveal the degree of success of waste prevention activities. Measuring the specific impact of each activity (*e.g.*, recording the amount of paper purchased before and after implementation or the amount of packaging used before and after implementation) on the waste stream will yield data indicating effective measures and areas requiring further development. This information shall be reported annually to the City's Waste Prevention Manager by each department.

A Program Plan for Reducing Paper Waste

Paper waste is a priority aspect of Newton's waste prevention plan. Efforts to identify promising opportunities for paper waste reduction may begin with a thorough assessment of paper use and management. The following assessment framework illustrates the types of questions the Waste Prevention Coordinator might ask during an assessment regarding the use of paper in the department. This assessment guidance is followed by possible recommendations that can be evaluated by the staff and implemented to reduce the quantity of paper used and discarded by staff in the department.

Office Paper Reduction Assessment Framework

Assessment Questions:

Copy Paper Use

1. Does the department have a policy requiring double-sided photocopying for all documents?
2. Does the department purchase ONLY paper with 30% post-consumer content?
3. Is a cover sheet used for fax transmissions?
4. Does the department have a central bulletin board to post notices?
5. Is paper used only on one side collected and used for receiving faxes or notepads?
6. Is the department telephone directory online?
7. If the department mails materials do they ensure the following:
 - Deleting unnecessary addresses and duplicates in mailing lists?
 - Use two-way envelopes for mailings that require a response?
 - Use standard paper sizes to minimize waste?
 - Design mailings to use both sides of the paper?

Office Equipment

1. Are the photocopier machines set to default to duplex?
2. Are there signs reminding staff to double-side photocopy?
3. Does the staff use e-mail to communicate with each other? Outside the department?
4. Does staff have access to computers?
5. Are letterhead templates available online or does the department print letterhead?
6. Are computers set for duplex printing?
7. Are printers capable of duplex printing? Are all trays and necessary parts in place?
8. If the department uses forms, are the forms available online?

Other Paper

1. Are interoffice envelopes reused?
2. Are unwanted file folders and hanging folders collected for reuse?
3. Does staff receive multiple copies of catalogues and other publications?
4. Does the department receive only the number of telephone directories necessary?

Assessment Observations:

Waste Management and Recycling

1. Ensure that recycling bins are clearly marked and accessible.
2. Look in the recycling bins to determine if staff are complying with the recycling program.
3. Look in the trash containers and compactors to determine if paper is co-mingled with trash.
4. Look in the recycling collection containers on loading docks or at central collection locations for contaminants and to ensure that segregated paper is being recycled.
5. Observe custodial activities and recycling collection processes and determine barriers to successful recycling.

Recommendations for Reducing Paper Use

Based on information gathered through the paper waste assessment, the Waste Prevention Coordinator may want to implement many or all of the following waste paper reduction measures:

Equipment

- Maximize the use of electronic communications.
- Set all photocopiers to default to duplex.
- Specify and purchase only printers capable of double-side printing.
- Set computers to duplex print.
- Provide templates for City department letterhead and envelopes.
- Develop an online library for all forms required by all City departments.
- Encourage electronic filing of forms, reports, and other documents whenever possible.
- Create online employee telephone directory.
- Make all reports available online.

Process Changes

- Require all photocopies to be double-sided including bid documents, contractor reports, financial reports, and any regular City reports.
- Request staff reuse paper that has a single unused side to receive incoming faxes, print drafts, etc.
- Use paper with clean side to make notepads and to print e-mail (only when necessary).
- Discourage staff from printing e-mail.
- Establish a reuse room; request that employees return useable file folders and other paper products for reuse.
- Ask staff to check reuse room before ordering folders and other paper products.
- Minimize the number of catalogues, journals, and publications delivered to the department.
- Establish a system to share publications.
- Request to be removed from mailing lists.
- Inform manufacturers and vendors that you would like to receive all product information online and that your department no longer accepts printed materials unless specifically requested.
- Reduce distribution lists and ask staff to pass along information to others when they are finished.

Environmentally Preferable Purchasing

- Specify and purchase only paper containing a minimum of 30% post-consumer content.
- Consider chlorine-free paper.
- Specify paper containing a minimum of 30% post-consumer content and soy-based ink for all printing.
- Request vendors reduce the packaging associated with deliveries of paper.
- Require vendors to take back pallets used to deliver paper.
- Consider paper made from kenaf and other tree-free sources.

Tracking Progress

- Establish baseline paper use for the department using purchasing records.
- Quantify cost to purchase paper over a stated period of time.
- Periodically measure purchases against baseline to determine progress and cost savings.
- Work with purchasing staff to ensure accurate reporting of data from all sources of paper purchases.
- Require vendors to provide reports on quantity and type of paper purchased as part of their contract.

Communication and Outreach

- Establish a Paper Use Reduction Policy and set goals for reduction.
- Solicit ideas from staff on new ways to reduce the use of paper.
- Remind staff of the Paper Reduction Policy periodically.
- Send e-mail notices to staff updating the progress of the reduction efforts.
- Communicate savings in paper costs to staff and consider using some of the money to celebrate success with staff, to purchase new equipment, or to improve workplace for all staff.

SECTION 3: ENVIRONMENTALLY PREFERABLE PURCHASING PROGRAM PLAN**Background**

The City of Newton (including all departments and schools) is committed to ensuring the purchase of the most environmentally preferable products and services available to the City. To the maximum extent practicable, products and services purchased and used by all City and school staff shall prevent waste, reduce toxicity, conserve energy and water, and incorporate recycled content material.

Based on the Newton Citywide Waste Prevention Policy, the City of Newton is establishing an Environmentally Preferable Purchasing program that will be fully implemented by December 2002. The City's Purchasing Department shall lead the program with support from each City Department and the School Administration.

The Purchasing Department shall establish the Environmentally Preferable Program goals and set targets for meeting the implementation deadline of December 2002.

Each Department shall follow the Environmentally Preferable Program guidelines and implementation recommendations, established by the Purchasing Department, to eliminate wasteful products and to identify environmentally preferable substitute products throughout City operations.

Purchasing Department Role and Responsibilities

The Purchasing Department shall appoint a staff person to implement the Environmentally Preferable Purchasing program for the City of Newton. The Environmentally Preferable Purchasing Manager's primary responsibilities include the following:

- Distribute the City's Waste Prevention Policy, signed by the Mayor, to all staff with purchasing responsibilities.
- Distribute a copy of the City's Environmentally Preferable Purchasing Plan to staff in all departments and to those responsible for purchasing products and services for the schools.
- Serve as the Environmentally Preferable Purchasing point-of-contact for all City departments and school staff.
- Work to establish goals and targets for the City's Environmentally Preferable Purchasing program. Communicate to all City personnel the goals and objectives of the City's Environmentally Preferable Purchasing program.
- Communicate to vendors, suppliers, contractors, and the public the City's intent to purchase products that meet or exceed established environmental criteria.
- Establish performance standards and reasonable standards for quality, availability, and price for environmentally preferable products.
- Establish program goals for all departments and schools within the City of Newton.
- Contact staff in each department and within the school system who develop bid specifications and/or purchase materials and services to schedule a meeting to discuss changes to the City's purchasing program.
- Chair a meeting with all City personnel involved in purchasing products and services. Consider extending the invitation to staff interested in reducing the quantity of waste generated by City operations and/or staff seeking to reduce the toxicity of the products used by City personnel.
- Provide definitions for terms that will be used in developing bid specifications for goods and services (e.g., recycled content, recyclable, post- and pre-consumer content etc.).
- Establish the chain of responsibility between the Purchasing Department and other City department staff who specify and purchase products and services.
- Review standard contracting language to ensure that it does not discriminate against products that contain recovered materials, or can be reused, refilled, or recharged.
- Coordinate with staff responsible for developing bid specifications and issuing invitations to bid to ensure that environmentally preferable purchasing criteria are included in each bid document.
- Consider developing and distributing a survey to current vendors, notifying them of the City's intent to purchase environmentally preferable products and services. Include a description of the City's program and define what the City considers environmentally preferable.
- Invite potential vendors to submit information on their environmentally preferable products and services.
- Develop reporting formats for the Purchasing Department and for all City Departments to use to report on progress in meeting its Environmentally Preferable Purchasing program goals.
- Solicit information and request feedback from staff who use the products and services to ensure that the program serves the needs of all City employees.
- Oversee testing of products and services as necessary.
- Share information and success stories with staff in other City Departments and in the schools.

The City's Purchasing Department can consider adopting the U.S. Environmental Protection Agency's Comprehensive Procurement Guidelines to set its recycled content standards and as a model for developing specifications for those items purchased by the City of Newton but not listed as part of the procurement guidelines. Attachment 2 provides a list of the USEPA guideline items.

The Purchasing Department shall be responsible for providing training in environmentally preferable purchasing to all City staff who develop bid specifications for the purchase of goods and services used by City personnel.

The Purchasing Department shall be responsible for assigning staff to chair meetings and initiate communications regarding the City's Environmentally Preferable Purchasing program.

Suggested Program Guidelines for City Departments And Schools

Each Department should appoint a staff member to lead Environmentally Preferable Purchasing program efforts.

Each Department shall review all products and services currently purchased to identify opportunities to:

- Eliminate single-use items.
- Eliminate potentially hazardous chemicals.
- Increase the use of durable products.
- Enhance energy conservation.

- Enhance water conservation.
- Reduce excess packaging.

Each Department shall implement Environmentally Preferable Purchasing requirements into the specifications for products and services.

Each Department shall support the Purchasing Department in discussions with existing vendors and in the search for new vendors.

Each Department shall agree to test substitute products and provide reports on product performance to the Purchasing Department.

Each Department shall provide an annual report to the Purchasing Department on their progress in meeting the City's Environmentally Preferable Purchasing goals. The report shall identify the following:

- Baseline prior to implementing the purchase and use of environmentally preferable products. In subsequent years, report will include comparison to previous year.
- Vendor and description of substitute product.
- Environmentally preferable product characteristics.
- Description of product packaging (*e.g.*, weight, material type, etc.)
- Unit price.

SECTION 4: WASTE PREVENTION PROGRAM PLAN FOR MAINTENANCE OPERATIONS

Background

The City of Newton maintains buildings, grounds, vehicles, and facilities that provide a range of repair and maintenance operations. Involving these operations is critical in eliminating waste and reducing the toxicity of wastes generated throughout the City. Often the products used in maintenance shops contain harmful constituents. In addition, the wastes generated by maintenance operations are bulky, heavy, and difficult-to-dispose. Targeting these wastes for reduction or developing innovative solutions to remove these items from the City's waste stream can significantly reduce the City's overall quantity of waste.

Depending on the level of technical expertise, the City's Waste Prevention Manager may be able to lead the waste prevention efforts for maintenance activities. If the City finds a need for someone with special expertise, they can appoint a separate staff member to oversee waste prevention for maintenance activities. If a second person leads this effort, the City will want to ensure coordination and communication strategies are in place.

The City of Newton shall appoint a staff person to manage the City's waste prevention efforts for its Maintenance Activities. (This can be the City's Waste Prevention Manager.)

The City of Newton shall direct each City department and the public schools to designate a maintenance staff person to be responsible for their department's program participation, and to serve as the point-of-contact at the facility.

Each City department and the public school maintenance operation shall develop a plan to reduce the quantity and toxicity of maintenance wastes by December 2002.

Maintenance Activity Manager Responsibilities

The City's Manager of Waste Prevention (or the Maintenance Activity Manager) shall work with the Waste Prevention Coordinators and staff in each maintenance operation to deliver training and information necessary for facility staff to implement a waste prevention plan for maintenance activities.

Training

Training is necessary to develop and maintain a waste prevention program for maintenance activities. Maintenance staff will benefit from easy access to information concerning alternative products and innovative services that can reduce their exposure to chemicals that are harmful to human health and the environment. Key recommendations for the development of an effective training program include the following:

- Work with City's waste prevention coordinators and staff from maintenance operations to tailor waste prevention programs to specific maintenance activities.
- Involve employees from all departments and the public schools in the decision-making processes. Employees are much more likely to participate in a program in which they feel some ownership.
- Offer training for all staff involved in maintenance activities to promote a common understanding of the program and an appreciation of their respective roles in ensuring its success.
- Provide right-to-know training for appropriate personnel.
- Provide maintenance personnel with training concerning the proper handling of fluorescent light bulbs.
- Include information concerning why the initiative was implemented, describing the potential benefits to the City of Newton, and presenting basic "how to" information.
- Provide avenues for maintenance staff to offer feedback on the waste prevention program and its progress.

Technical Assistance

The City's Waste Prevention Manager (or Maintenance Activity Manager) shall provide technical assistance and help to identify alternative products and processes as requested by City department and public school maintenance staff.

Reporting

The City's Waste Prevention Manager (or Maintenance Activity Manager) shall coordinate reporting for maintenance operations. The City Waste Prevention Manager shall assist the Waste Prevention Coordinators responsible for compiling all waste prevention progress.

Maintenance Staff Responsibilities

- Designate someone from each shop to serve as the point-of-contact for all waste prevention activities.
- Attend waste prevention training sessions offered by the City of Newton.
- Attend waste prevention and right-to-know training sessions offered by the City of Newton.
- Participate in the testing of alternative products and provide feedback on the substitute product's performance.
- Offer suggestions for improving the waste management and recycling systems.
- Identify and share opportunities to make a product switch or a process change that will reduce waste, eliminate toxic chemicals, and enhance worker health and safety.

Recommendations for Preventing Waste and Enhancing Recycling

The following section presents recommendations for preventing waste and enhancing the current recycling program in the City of Newton's Maintenance operations. The waste prevention recommendations are presented first, followed by the recycling program recommendations.

Conduct Waste Prevention Training.

The City of Newton may want to review its training and orientation programs to ensure that they effectively address waste prevention, recycling programs, and right-to-know issues. In addition to City-sponsored training, identify other opportunities for maintenance staff to learn about waste prevention and recycling programs.

Direct Department-wide cleanup.

The City may want to begin by conducting a cleanup program in all of its maintenance operations. Often operations at maintenance facilities would benefit from an overall cleanup of wastes, recyclables, and unused and unusable products and equipment.

To support department efforts, the City can arrange to have resources available to assist with cleanup activities including; transportation for unwanted items, recycling contractors for difficult-to-recycle items, and technical resources for facilities with excess or unwanted chemicals and other potentially hazardous materials. The City can arrange to have an experienced professional evaluate the use, storage and disposal of hazardous products. Waste transportation and disposal of wastes generated from such an initiative will result in some costs. Following the cleanup, each operation will be in a better position to initiate changes in waste management

Assign maintenance staff responsibility for the waste prevention and recycling program.

Each department that has maintenance responsibilities can appoint a staff person responsible for working with other City staff designated to lead waste prevention programs. Facility maintenance staff selected to lead the waste prevention efforts will work with maintenance staff from other departments and the school to implement a citywide waste prevention program.

Reduce the procurement and use of industrial toxic chemicals by changing purchasing practices

The U.S. Environmental Protection Agency targets a list of chemicals for reduction or elimination. Attachment 1 presents the 17 chemicals targeted by USEPA. These chemicals are released to the environment in large quantities, are generally considered to be very toxic or hazardous, and substitutes/technology exists to reduce releases of these chemicals through pollution prevention or other means. Solvents typically used for small component cleaning operations, brake cleaning and choke and carburetor cleaning often contain these chemicals. Alternative products are available that perform the required function and do not contain these chemicals. To meet the City of Newton's goal of reducing the toxicity of its wastes, staff in maintenance operations could change purchasing practices to require substitute products that do not contain these target chemicals.

Vehicle Maintenance Operations Recommendations

The City of Newton has implemented a number of spill prevention techniques in its vehicle maintenance operations. These include:

- Installation and use of overhead fluid dispensing system.
- Use of drip pans to catch leaking fluids.
- Installation of quick drain plugs.
- Use of aqueous parts washers.

The City of Newton may want to ensure these techniques also are used in other types of maintenance operations where applicable. In addition, maintenance staff may want to consider the following recommendations in developing a plan to reduce the quantity and toxicity of the waste stream.

Enhance spill cleanup practices.

Use Shop Vacuum for Oil Spills.

When spills occur, vacuuming provides the most environmentally sound way of managing uncontained oil. A maintenance facility could purchase two vacuums to ensure equipment availability. This process ensures recovery of the spilled oil for recycling. Several sizes of vacuums are commercially available for use in wet or dry situations.

Use hydrophobic mops for oil cleanup.

A hydrophobic mop has a high viscosity oil mop head composed of 100% polyethylene, which makes it very effective at absorbing and containing oil spills. Each mop head can be reused up to seven or more times before disposal.

Use reusable pads and wringer to collect oil spills.

If the shop does not elect to purchase a vacuum, cleanup wastes may be minimized by using reusable absorbent pads under leaks and to clean spills. These pads are highly absorbent and can be used several times before disposal. Once the absorbent pads are saturated with oil, the pads are passed through a wringer that removes a large amount of the oil, allowing the pad to be reused. Depending on the quantity of oil absorbed, the pad can be reused approximately four to ten times before disposal.

Collect and reuse dry sorbent.

Sorbent can be collected, filtered and reused by repair facilities that could purchase or construct dry sweep sifters. The sifter is simply a mesh screen, placed over a 55-gallon drum, which filters usable sorbent from saturated sorbent. The saturated sorbent forms clumps, which cannot pass through the screen, whereas the dry sorbent can be reused. A small trap door cut into the bottom of the drum can be used to distribute the reusable sorbent. Saturated sorbent should be tested and may require disposal as hazardous waste.

Improve labeling and secondary containment.

A review, conducted by an experienced professional, of the product labeling and secondary containment systems for every product used and stored in the facilities by the staff in maintenance facilities throughout the City of Newton may yield critical opportunities for improved materials management. In addition to ensuring that new product containers are properly labeled and stored, it is generally good practice to store waste oil, waste antifreeze, and used sorbent in well labeled containers in areas that are equipped with secondary containment. Secondary containment can range from constructing a concrete berm around the storage area to using a dedicated building or outdoor storage locker. Other types of secondary containment include pallet systems, flooring systems and flammable/combustible storage cabinets that can be used to store various size containers (5-gallon containers to 55-gallon drums). Whatever containment system is used, it should provide the facility with the adequate protection and comply with applicable regulations.

Improve used oil and antifreeze segregation and recycling.

A comprehensive review, by the City of Newton, of spent antifreeze and used oil collection practices will help to ensure that these substances are effectively segregated for recycling. For those maintenance activities that do not have a recycling program in place, the City may want to establish a contract that provides frequent service and does not present storage problems for the participating facilities.

Return lead-acid batteries

Consider strategies to improve the collection of spent batteries from the shop floor, and return them to the manufacturer for recycling. Programs that minimize the storage requirements and eliminate the potential for acid spills are preferable.

Enhance paper recycling program.

The City of Newton can work with maintenance operations staff to ensure access to a recycling program. Staff can place mixed paper, newspapers, magazines, catalogs and phone books in recycling containers for recycling. Development and implementation of a carefully coordinated program for collection and drop-off of the collected paper will improve the potential for program success. Collaboration of City staff and staff at each of the maintenance operations is key.

Enhance cardboard recycling program.

The City of Newton can work with the staff throughout maintenance operations to ensure productive participation in the recycling program. Staff can flatten cardboard and place it in recycling containers for recycling. Appropriate City personnel will have to coordinate collection/drop-off of the collected corrugated cardboard with staff at each of its maintenance operations.

Enhance oil filter recycling program.

Oil filters can be recycled. Once crushed, the filters can be stored in 55-gallon drums for recycling by a local contractor or added to existing metals recycling programs.

Enhance metals recycling program.

The City of Newton can establish a metal recycling program that collects metal parts from repair operations. To make metals recycling easier, (especially for small parts) metals collection containers can be placed at strategic locations in the shop.

Improve drum recycling.

Maintenance operations throughout the City can ensure that all 55-gallon drums are returned to the vendor as part of the contract to purchase the product.

Establish a pallet reuse and recycling program.

Pursue establishing a contract with a private recycler to remove wooden pallets from the waste stream.

Maintenance Operations Recommendations

Install energy efficient lighting.

Installing low-mercury fluorescent lamps and electronic ballasts will reduce the cost of lighting and disposal of mercury.

Install occupancy sensors.

Efficiency controls such as occupancy sensors and timers in rooms that are not in constant use reduce energy costs.

Improve management of fluorescent tubes.

Recycling used fluorescent lighting tubes offers an environmentally sound, acceptable alternative to waste disposal.

Explore opportunities to install equipment and use renewable energy resources.

Consider photovoltaic panels to generate electric power for the building. Maximize the use of daylight to reduce the use of overhead electric lighting. Consider solar energy technologies.

Improve heating and cooling systems.

Separate HVAC systems to serve areas of the building that have different hours of occupancy. Consider purchasing and installing reusable filters for the HVAC system.

Maximize the use of natural ventilation.

Use clean outside air in lieu of mechanical ventilation when possible.

Install energy efficient boilers.

When retrofitting a building or constructing a new facility, specify the highest rated energy efficient boiler available. Consider multiple modular boilers to provide more efficient partial-load system operation.

Eliminate hazardous products.

Identify all cleaning and maintenance products that contain harmful chemicals and identify alternative products. Consider a review of the following products: paint and paint thinner

- Floor scrubber and stripper
- Graffiti remover
- Solvents and solvent sinks
- Pest management products
- Bathroom cleaner

SECTION 5: ENVIRONMENTAL OUTREACH PLAN

Background

The City of Newton is kicking-off a comprehensive solid waste reduction program throughout all municipal operations and the public schools. The goal of the City's program is to reduce the quantity and toxicity of the wastes generated by all City departments and public schools by XX% by [Date]. The City of Newton Waste Prevention Policy was issued by Mayor X on [Date]. City departments are directed to have their waste prevention programs in place by [one year later].

To lead the program, Mayor X has appointed Mr./Ms. Y as the City's Waste Prevention Program Manager. [Insert bio highlights for Mr./Ms. Y]. To support City department efforts, each department and the public schools have been asked to designate a staff person to lead the waste prevention program.

As part of its commitment to enhancing environmental awareness and the importance of waste prevention, the City has prepared an information package that provides details of the waste prevention program elements. This package, available from the [Public Affairs Office], contains a brief description of the initial program targets, definitions for waste prevention and recycling terms, and a list of resources that journalists and other interested citizenry can use to learn more about the City's program.

While this program targets waste reduction within City Government and our public schools, the City of Newton also is committed to encouraging residents and local businesses to implement waste preventing practices. The City plans to promote waste prevention and celebrate success stories by publishing progress reports and case studies through a number of media outlets and, in the future, on the City's web site.

Outline for Waste Prevention Education Packet

1. City of Newton's Waste Prevention Policy
2. Timeline for City of Newton to Meet Waste Prevention Targets and Goals
3. Waste Generation Data
 - Quantity of Waste Generated by City Government and Schools
 - Quantity of Recyclables Generated by City Government and Schools
 - Recycling Rate
4. Description of Waste Prevention Assessment Process
 - Highlights of Training Programs
 - Paper Waste Reduction Program Efforts
5. Description of Environmentally Preferable Purchasing Program
 - Environmentally Preferable Purchasing Goals
6. Description of Waste Prevention Plans for Maintenance Activities
7. Description of City's Awards and Recognition Program
8. Fact Sheets
 - Waste Prevention Tips for Specific Waste Streams
 - Waste Prevention Recommendations for Target Businesses
 - Waste Prevention Recommendations for Residents
 - Cost/Benefit Analyses of Waste Prevention Opportunities
9. Definitions
 - Waste Prevention
 - Recycling
 - Recyclable
 - Post-Consumer Recycled Content
 - Pre-Consumer Recycled Content
 - US Environmental Protection Agency's List of Chemicals Targeted for Elimination

Coordinate with Local Businesses

Promoting waste prevention within the business community is one of the components of the City's comprehensive waste prevention program. Waste prevention initiatives that can be presented to the business community may include, but are not limited to, the following:

- Developing a list of all local organizations seeking donations and indicate the types of items needed. Distribute the list via the Internet and during meetings with local businesses. Encourage businesses to support local not-for-profit organizations with donations and/or to serve as a "special project" collection point for donations by City residents. Businesses can promote these special collection day(s) and locations and arrange to have donated items delivered to organizations.
- Work with blocks of similar businesses to identify those businesses with active waste prevention programs. Look for opportunities to share waste prevention information with customers. For example:
 - Promote coffee shops with discounts for customers who bring in a refillable coffee cup.
 - Announce discounts for customers who bring a reusable canvas bag and do not take "paper or plastic" bags.
 - Develop waste prevention case studies for businesses that have internal distribution programs using durable packaging between store and distribution center. Share the waste prevention information with the public.
 - Identify products in local shops that are manufactured with recycled content. Develop and publish an environmentally-friendly shopping guide for consumers. Make it easy to shop for waste preventing and less toxic products throughout Newton.
- Coordinate composting information for interested businesses and provide technical assistance as possible.

The City of Newton may want to consider adding to its waste prevention program and offer waste prevention assessment assistance programs to local businesses. The City's Waste Prevention Manager can work with the local Chamber of Commerce and interested businesses to design a program that meets the needs of businesses seeking to reduce their costs by cutting their waste management bills.

Any of the outreach mechanisms can be used to celebrate successful businesses and promote the business community's efforts.

Web-based Resources

The City of Newton can use web-based resources to publicize its waste prevention program and can target the information for several audiences. The information presented in the waste prevention packet can be added to the web site and announced through a press release in the local media. The City's web site can present the following:

- News and Updates from the Waste Prevention Manager: This section can be devoted to providing information to City staff on program progress, deadlines, policy updates, waste prevention assessment schedules, and other "hot news" relevant to City workers.
- Waste Prevention Manager's Forum: This section may offer the following:
 - Question & Answer format for Managers to ask questions and receive responses for commonly asked questions;
 - New information about waste preventing products and services
 - Information about upcoming training sessions;
 - Technical assistance services; and
 - Conference calendars.
- Case Studies
- Cost/Benefit Analyses
- Waste Prevention Assessment Results and Programs: This section can serve as a guide for other departments and businesses preparing to conduct a waste assessment. Sharing waste reduction tips and information about initiatives will save time for others.
- School-based Success Stories
- Kid's Corner
- Tips for City Residents: This section identifies waste reduction strategies for Newton City residents to consider. One approach to maintaining this section of the web site is to highlight waste prevention measures suitable for implementation seasonally, thus providing for new material to be posted on the web site periodically and providing for timely tips for residents. The following section provides an example of the seasonal content that might appear in this section of the web site.
- Tips from City Residents: This section can solicit feedback and waste prevention and environmentally preferable product suggestions from residents.

These are only a few of the ways that the City of Newton can present information about its waste prevention program and encourage residents and businesses to adopt successful initiatives.

Waste Prevention Tips for Residents

The City of Newton can promote residential waste prevention initiatives designed to reduce both the quantity and the toxicity of the waste stream. The waste prevention concepts suggested below can be presented through a number of programs. We offer one suggested approach that addresses the range of opportunities for residents to reduce their environmental impact.

Educating consumers is key to reducing the quantity of waste generated by the residents of Newton. Newton can build an outreach campaign for residents around several themes. For example, Newton can designate 2002 as the "Year of Waste Prevention" with a series of programs throughout the year. Residents can read about the program in local media or on a City web site; hear about the programs from City officials and on local radio or public television; and learn about the programs from the schools, community groups, civic organizations etc. Every two-three months Newton can introduce a new element to the waste prevention program. The following briefly outlines one approach.

January - March 2002

Purchasing Less Packaging!

The focus can be on reducing waste by encouraging consumers to evaluate a product, not only for price and quality, but to consider how the product is packaged. Waste prevention tips for packaging reduction include:

- Reduce packaging by purchasing food, drinks, household cleaning products, laundry detergent, shampoo and other items in the largest containers feasible.
- Eliminate individually wrapped food items and other foods that are sold with excess packaging.
- Avoid convenience foods such as single-serve meals. These items are almost always over-packaged. Consider purchasing reusable containers so that full size entries or leftovers can be stored. Using these containers, items can be transported in bag lunches, or frozen for later use.
- Purchase unwrapped fruits and vegetables. Individually wrapped fruits and vegetables are relatively new at grocery stores. Fruits and vegetables do not need to be packaged on a styrofoam tray and wrapped in plastic film.
- Purchase food and other products packaged in recyclable containers. Packages that are constructed of multiple, or composite, materials are not designed for recycling. These multiple-material packages complicate the recycling process or may even contaminate the City's recycling stream. For example, check to see if the plastic film used to wrap glass beverage containers is recyclable in Newton or if it needs to be peeled and discarded as trash before placing the glass beverage container in the recycling bin.
- Write letters to manufacturers, advertisers, and corporate offices asking them to ensure that their product packaging is compatible with Newton's recycling program. Tell them that you will no longer purchase their products unless the packaging components can easily be recycled.
- Ask retailers if you can leave, or return, packaging to the store for recycling when the materials can not be recycled in your community's recycling program. If the retailer does not have a program to recycle the packaging, suggest that the retailer work with the manufacturer to develop a recycling infrastructure for the packaging components.
- Encourage retailers who offer packaging take-back or recycling programs for end-of-life products and packaging and product manufacturers who strive to ensure that their product packaging is recyclable. Let them know you appreciate their efforts and will continue to purchase their products because they are recyclable.

Newton can promote the "pack attack" program by helping residents understand what types of packaging can not be recycled. Ask community groups, churches, clubs or other similar organizations to hold a contest asking residents to weigh and record the quantity of all product packaging they purchase and bring into their homes for one month. Using data gathered during the contest, Newton can extrapolate citywide to develop estimates on the quantity of packaging generated by the City's residents. Newton residents may be surprised at the outcome. Remind residents that they paid for that packaging, brought it into their homes, opened the product, and threw the packaging into the trash. They then paid for the packaging a second time when they paid to have the City remove their waste.

April - June

Spring Cleaning!

Toxicity Talk

- Publish a list of ingredients that residents should avoid in the products that they purchase and use in and around their homes. Include information on household cleaners, floor strippers, paints, stains and varnishes, pest control, and vehicle maintenance products.
- Develop a short training program and invite residents to learn about the potential harmful chemicals that are introduced into households throughout Newton. Provide guidance for reading product labels, provide a list of

chemicals targeted for elimination or reduction, and discuss alternative products and sources. Contact manufacturers of alternative, non-toxic products to see if they are willing to donate sample products. If a training program is not possible, construct a display that can be used at various locations around town to promote the purchase a use of less- and non-toxic products.

- Include information about gardening without harmful chemicals.

Yard Waste

- Post signs at the recycling center reminding residents how to manage yard waste.
- Encourage residents to leave grass clippings on the lawn.
- Suggest a compost pile for yard clippings and provide instructions on how to encourage decomposition of yard waste.

Donations

Preventing items that are in good condition from becoming a waste is easy. A variety of organizations actively seek donations of household items, clothing, sporting goods, and small appliances. Assisted living establishments and nursing homes may be interested in receiving donations of books, videos, and music. Domestic violence shelters and homeless shelters may be looking for gently used furniture, office equipment, and functional vehicles to help their clients get a new start. Animal shelters may use newspapers, worn blankets, and used bedding as bedding for animals. Newton can promote local groups who accept donations by posting signs at the recycling center, adding a display ad on a City web site, and by sending notices to clubs and organizations to raise the awareness of the waste prevention value of donating items that are in good condition.

The following web sites also can be promoted to assist residents in locating recipient organizations.

http://www.wastecap.org/wastecap/commodities/organics/food_donations.htm

WasteCap of Massachusetts: provides addresses of organizations accepting food donations.

<http://www.zoots.com/locations/Goodwill.htm>

Zoots and Goodwill Inc. provide a guide to tax deductions for donated clothing.

The value of clothing donations may be deducted as a charitable contribution on your federal income tax return using the item's fair market value. You will receive a receipt at the time of your donation; you fill in the market value of your donation.

<http://www.epa.gov/region1/steward/reuse/consumer.html>

US Environmental Protection Agency, Region 1 web site links residents seeking to donate a variety of consumer goods, ranging from cars, bikes, furniture, and clothing for reuse. Visit the site to identify the local outlets accepting donations.

July - September Home Improvements!

Painting

Paint and solvents are some of the most dangerous products that residents use in their homes. Newton can promote safety in the handling of paints and related products.

- Encourage residents to use latex paint whenever possible and avoid oil-based paints.
- Work with homeowners to ensure they are purchasing the correct quantity of paint needed to complete the job.
- Recommend shopping at a paint store that can mix paint using a computer. Suggest residents ask if paint can be returned and re-mixed until the color is correct.
- Ensure adequate ventilation by opening windows and doors and using a fan.
- Identify and promote locations that accept good, leftover latex paint for recycling.
- Recycle empty paint cans.

Construction and Renovation Debris

- Remind residents through newspapers, radio announcements, posters, and bulletin boards at retailers of home improvement products of the proper removal and disposal practices for construction and demolition debris.
- Identify organizations that accept deconstruction materials as donations. Often groups will take kitchen and bathroom cabinets, doors, windows, carpeting, and fixtures for reuse.

Recycled content and Energy Efficient Products

- Recommend installing carpeting and/or rubber floor covering with recycled content.
- Request residents purchase appliances and lighting that is energy efficient and meets the USEPA Energy Star specifications.
- Identify local retailers who sell recycled content products and energy efficient appliances.
- Select products with the longest warranty. Longer warranty periods indicate a manufacturer's confidence in the durability of their product.

October - December

Focus on Paper!

- Encourage residents to notify retailers and request that their names be deleted from mailing lists before holiday catalogs are mailed.
- Share catalogs with friends and neighbors.
- Go to the library or go on-line to read magazines and newspapers.
- Request that free publications not be delivered to your address.
- Stop junk mail. Access these web sites to help stop unwanted direct mail: <http://www.obviously.com/junkmail/> <http://www.stopjunk.com> and <http://www.junkbusters.com/ht/en/declare.html>
- Read newspapers and other periodicals online.
- Encourage holiday shopping online.
- Suggest making holiday cards and gift wrap instead of buying cards and wrapping paper.
- Suggest sending electronic holiday greetings.
- Maximize paper recycling.

Annual Award and Recognition Program

City departments and public schools that implement and report on successful waste prevention practices deserve to be recognized in a public forum. Annual award(s) presented by the Mayor and the City's Waste Prevention Manager will serve to celebrate the City's success and the success of the staff in departments that reduce the quantity and toxicity of the waste.

The City of Newton can consider the following:

- Hold a contest to name the City's waste prevention program and its award(s).
- Invite the press to tour the successful departments and see the successful programs.
- Provide awards to students who lead successful waste prevention programs in their schools.
- Recognize the department that achieves the greatest reduction in waste and toxicity.
- Recognize the department that implements the most innovative waste prevention initiative.
- Invite businesses to submit waste prevention case studies and recognize successful participating businesses.
- Select and recognize residents who offer the best waste prevention suggestions via the web site.

Other Outreach Opportunities

The City of Newton's Waste Prevention Manager can consider the following:

- Issue press releases and provide progress reports on City efforts.
- Write feature articles and submit to local press and other relevant publications describing the City of Newton's successful waste prevention programs.
- Speak at meetings of civic organizations, parent teacher organizations, school board, town meetings, and to business organizations such as the Chamber of Commerce.
- Disseminate the City's Annual Waste Prevention Report.

Summary

The City of Newton can develop a list of action items based on the elements of the outreach campaign. It is important to ensure a clear understanding of the program by City personnel, local media, educators, residents and businesses. Participants who understand and appreciate the purpose of the waste prevention program and its goals will promote its success. Defining the program is the foundation of the outreach program and will serve as the platform for any outreach effort that follows. The, once the City sets aside funding and provides the Waste Prevention Manager or the designated spokesperson the tools necessary to design and implement a successful outreach campaign, the momentum can build for effective waste prevention throughout Newton.

Preventing waste is not only good for our environment - it will save the City's residents money over the long run and free up current funds allowing enhanced services and improved programs in the public schools.

SECTION 6: WASTE PREVENTION RESOURCES

http://www.massdfa.org/ipm_resources_schools.htm – School IPM Resources page of the Mass. Pesticide Bureau.

www.bostonbmrc.org - Building Materials Resource Center, a nonprofit building materials re-use project accepts donations of good quality used and surplus building materials and distributes them, for a modest fee, to low and moderate-income homeowners and nonprofit organizations, schools, and churches. The BMRC also offers homeowner support services, including home improvement classes, in-home consults, and a do-it-yourself window repair shop.

<http://hydra.gsa.gov/planetgsa/resources/greenroom.htm> – How To Set Up A "Green Room". This site offers guidance for offices and individuals that accumulate new and used office supplies they no longer have a use for but that can be used by someone else. These supplies are placed in the "Green Room" for redistribution. The "Green Room" should be the first source when additional supplies are requested.

<http://www.metrokc.gov/enviro.htm> - King County, Washington's web site offers waste prevention and recycling information including packaging reduction initiatives.

<http://www.state.ma.us/dep/recycle/recycle.htm> - The Commonwealth of Massachusetts Department of Environmental Protection site provides waste prevention and recycling information targeted to cities and towns.

<http://wrrc.p2pays.org> - Waste Reduction Resource Center offers technical manuals for preventing waste for government operations including offices, transportation, construction and demolition and vehicle repair.

<http://www.moea.state.mn.us/campaign/index.html> - Minnesota Office of Environmental Assistance waste prevention web site offers ideas to reduce office paper use and purchasing environmentally preferable products.

www.stopwaste.org - Alameda County Waste Management Authority and Alameda County Source Reduction and Recycling Board's waste reduction and recycling web site.

www.nycwasteless.com/citysense - New York City Agencies' site provides waste prevention tips and case studies.

<http://es.epa.gov> - *EnviroSen\$e* includes links to the Joint Service Pollution Prevention Technical Library and the Pollution Prevention Roundtable. It offers solutions to a wide range of environmental questions.

<http://www.epa.gov/wastewise/wastepre.htm> - USEPA WasteWi\$e program provides information and assistance in setting up a waste prevention program.

<http://enviro.nfesc.navy.mil/p2library> - *Joint Services Pollution Prevention Technical Library* is a Department of Defense site providing information on less toxic substitutes for a variety of uses.

www.westp2net.org/Janitorial/jp4.htm - *The Janitorial Products Pollution Prevention Project* - Provides information for janitors about the products and chemicals used to clean and maintain offices and other facilities. Indoor Air Quality Tools for Schools – an easy-to-use kit that shows you how to carry out a practical indoor air action plan at little or no cost using common-sense activities and in-house staff. Published by the U.S. Environmental Protection Agency. May be ordered from: Superintendent of Documents, P.O. Box 371954, Pittsburgh, PA 15250-7954, or call (202) 512-1800.

Cleaning Products Pilot Project - In 1997, USEPA and the General Services Administration (GSA) published the results of its efforts to perform a comparative risk management assessment of 19 cleaning products. This document is available from the Pollution Prevention Information Clearinghouse at (202) 260-1023. Ask for EPA 742-R-97-002. Or, contact the Environmentally Preferable Purchasing Program via fax at (202) 260-0178 or e-mail goidel.eunsook@epamail.epa.gov.

US General Services Administration, *Commercial Cleaning Supplies Catalog*, (800) 241-7246. The catalog contains a section on biodegradable cleaners and degreasers and a matrix that provides information on seven environmental attributes including: skin irritation, food chain exposure, air pollution potential, fragrance, dyes, reduced or recyclable packaging and features to minimize exposure to concentrate.

<http://www.epa.gov/epaoswer/non-hw/reduce/wstewise/id-motor.htm> - USEPA provides targeted information for vehicle maintenance activities.

EPP RESOURCES

The City of Newton can access a significant number of resources and consider developing its environmentally preferable purchasing program based on the successes of other entities pursuing the purchase of goods and services with a reduced impact on the environment.

STATE AND LOCAL GOVERNMENT RESOURCES

Commonwealth of Massachusetts Environmentally Preferable Purchasing Program - www.state.ma.us/osd/enviro.htm or www.magnet.state.ma.us/osd/enviro/products.htm

Includes state contracts for environmental products, reports on state agency pilot projects with various recycled products, and a description of Massachusetts' efforts to increase the purchase of environmentally preferable products through training and outreach.

Comprehensive Procurement Guideline - www.epa.gov/epaoswer/non-hw/procure
Recovered materials advisory notices for the recycled products designated by USEPA.

Alameda County Waste Management Authority - www.stopwaste.org

At this site, the user may download or order free publications from Alameda County, California, including the *Resourceful Purchasing Manual* and the *Sustainable Building Guidelines*.

California Integrated Waste Management Board - www.ciwmb.ca.gov

Includes a description of the state's Buy Recycled Program and a database of recycled content products.

City of Santa Monica - www.ci.santa-monica.ca.us/environment/policy

Learn about Santa Monica's innovative Sustainable City Program. This site includes the City's policies, program descriptions, environmental purchasing criteria for janitorial products, and integrated pest management system.

Janitorial Products Pollution Prevention Project - www.westp2net.org/Janitorial/jp4.htm

Information, fact sheets, product sample kits, purchasing specifications and other outreach materials to advise users on the health, safety, and environmental consequences of their janitorial product choices.

King County, Washington - www.metrokc.gov/procure/green/

Resources from King County, Washington's Green Purchasing program include a policy statement, bid and contract specifications for recycled and waste preventing products and descriptions of staff experiences in using these products. Specifications, products and vendors for green construction projects, including paints, are available at <http://dnr.metrokc.gov/market/map/index.htm>.

Local Government Environmental Assistance Network - www.lgean.org:80/html/p2-6.cfm

A forum and clearinghouse of environmental information for local government, including purchasing practices that support pollution prevention.

State of Minnesota - www.moea.state.mn.us/lc/purchasing/index.cfm

Minnesota's EPP site includes advice on establishing environmental criteria and examples of model programs as well as access to *The Environmentally Preferable Purchasing Guide*. This easy-to-use reference tool for 30 "green" products includes less toxic cleaners, refurbished furniture, and water-efficient bathroom fixtures, as well as case studies of product use and sample specifications.

National Association of Counties - www.naco.org/programs/environ/purchase.cfm

Obtain the NACO EPP starter kit. It includes program implementation strategies, case studies and a resource list.

National Association of State Purchasing Officials - www.naspo.org

Includes a searchable database of contract specifications for recovered content products.

New York CitySen\$e Project - <http://www.nycwasteless.com/citysense/index.htm>

Learn how New York City Agencies successfully reduced waste and access City-specific environmentally preferable purchasing guidance through the *NYCitySen\$e* program, sponsored by the Department of Sanitation, the Mayor's Office of Operations, and the New York State Energy Research and Development Authority.

Pacific Northwest Pollution Prevention Resource Center (PPRC) - <http://www.pprc.org/pprc/pubs/topics/envpurch.html>
Applicable to the entire United States, this site provides information that can assist in identifying "green" products, setting up an environmental purchasing program, general and specific resources that are available to purchasers, guides for locating green products, and examples of procurement programs.

Pennsylvania Resources Council Buyer's Guide to Recycled Products - <http://www.prc.org/guide/prodindx.htm>
Co-sponsored by the Pennsylvania Department of Environmental Protection, this site offers an easy-to-access list of recycled products and an alphabetical list of product manufacturers.

Defense Logistics Agency - www.dscr.dla.mil/catalogs/catalog.htm
Source *Environmentally Preferred Products* and *Energy Efficient Lighting* Catalogs listing items (out of the more than 7 million cataloged in the Federal Logistics Information System) that have been evaluated and determined to be environmentally preferred over other, similar products. These environmentally preferable products have passed the rigid certifying requirements of either the Department of Energy (DOE), USEPA or other certifying agencies.

ENERGY STAR® - <http://www.epa.gov/appdstar/purchasing/>
The ENERGY STAR® purchasing website offers product information and tools to enhance energy efficiency, including savings calculators and drop-in specifications for 21 energy efficient products.

Government Services Administration (GSA) - www.fss.gsa.gov/environ/
Learn about the Federal Supply Service's environmental programs and access the *Environmental Products Guide* to help you choose more environmentally preferable alternative products.

Office of the Federal Environmental Executive - www.ofee.gov
Information on the latest Federal government efforts to implement recycled content and environmentally preferable purchasing among federal agencies.

USEPA Environmentally Preferable Purchasing Program - www.epa.gov/opptintr/epp
EPA's Environmentally Preferable Purchasing site offers guidance, descriptions of pilot projects, success stories, and access to the latest program updates including a searchable EPP Contracts and Standards Database. It also features an EPP Promising Practices Guide, an online source for green purchasing tips, strategies, success stories, and the multimedia EPP training tool.

Green Order - <http://greenorder.com>
A directory of product manufacturers and distributors tailored to the needs of institutional purchasers, especially government buyers. Offers recycled content, energy efficient biobased and environmentally preferable products.

GreenSeal - www.greenseal.org
Non-profit organization that provides independent certification of the environmental attributes of various product categories. This website includes search capability for their products database and allows access to the product standards used for certification.

National Electrical Manufacturers Association - www.nema.org/lamprecycle Information on fluorescent lamp recycling.

Northwest Product Stewardship Council - <http://www.govlink.org/nwpsc>
Access the *Guide to Environmentally Preferable Computer Purchasing* to learn more about environmentally preferable products and additional resources for model criteria and contracts.

End of Report

2. Source Reduction Schedule of Deliverables: This document outlines specific tasks and due dates in the contract between the City and the Consultant.

Source Reduction Coordinator : Schedule of Deliverables

Task One: Department Level Waste Reduction Coordinators

Identify department-level waste reduction coordinators. These staff will be main coordinators to implement goals and targets for individual departments. Subtasks include:

	Completion Date
A. Create an on-line, electronic directory of department waste reduction coordinators	11/01/02
B. Publicize the names of coordinators to all city and school system staff and residents	11/15/02
C. Include contact information for these people during employee training, in city reports, and web site	11/15/02
D. Establish a Source Reduction Advisory Committee to review and advise on policy and program issues such as: on EPP, Integrated Pest Management, Solid Waste and Organics, Recycling.	12/01/02

Task Two: Waste Reduction Goals and Targets

Establish quantifiable waste reduction goals and targets to reduce the quantity and toxicity of wastes generated by all City operations, municipal departments and public schools. The goals should include a multi-year schedule of planning and implementation projects and deadlines for city operations, municipal departments, project committees and businesses. Subtasks include:

	Completion Date
A. Establish quantifiable goals and targets jointly with all department managers	12/15/02
B. Integrate the goals and targets into administrative procedures and training materials over FY03	2/31/03
C. Publicize the goals and targets to build support	1/30/03
D. Target waste for reduction and develop innovative solutions for their removal and handling in all departments, but especially ones such as Maintenance Operations, that use toxic substances	2/28/03

Task Three: Develop training course for waste reduction coordinators, city personnel, and citizen stakeholder groups.

Provide training to city department managers, and department waste reduction coordinators, on the goals, targets and methods for reducing waste. The training should utilize the waste reduction coordinator training developed by other state and municipal governments. (for example, the California Integrated Waste Management Board has developed a training program that outlines the methods/responsibilities for waste reduction coordinators). Subtasks include:

	Completion Date
A. Research and draft a training program for use by city departments	03/03
B. Develop materials and outreach training for city personnel	04/03
C. Coordinate training workshop logistics, location, tailor to department needs	4/03 - 09/03
D. Hold several training sessions for city personnel (at least three per year)	4/03 - 11/03
E. Evaluate effectiveness of training, recommend changes	11/30/03
F. Assist in co-presenting a maximum of two regional training sessions for other MA municipalities	07/03 -12/03

Task Four: Expand the program and develop outreach strategies to encourage residents and businesses to reduce the quantity and toxicity of their respective waste streams. The City and the Coordinator will develop promotional material, information packages and other media materials and concurrent website materials. Subtasks include:

	Completion Date
Identify next steps and a preliminary timeline for implementing a source reduction outreach campaign in the commercial and residential sectors	1/03

Task Five: Create a guidebook of municipal waste reduction policy, step-by-step guidance on how to implement the policy. Outline administrative purchasing and procedural changes, new contract(s), and tips on their adoption. Evaluate and document the effectiveness of various strategies and approaches to reducing waste generation throughout city government. Subtasks Include:

	Completion Date
A. Provide draft of the guidebook for DEP review and comment back to Newton project manager (Final Guide should be in MS Word and HTML (MS Front Page) formats)	12/03
B. Revise and complete the guidebook as needed and appropriate. A section on “lessons learned” over the course of the project should be included .	2/04
C. Provide city managers and DEP baseline assessments in departments, and issue progress reports at 6 months (3/03), 1 year (9/03), 1 1/2 years (3/04)and at the 20-month (5/04) time frames during the project. Additional evaluations should be conducted for projects undertaken in the business and residential sectors at these same time intervals	3/03-5/04
D. Create a <i>How To Reduce Waste In Massachusetts Municipal Government Training Kit</i> .. Enlist the participation of of a team of city personnel, external stakeholders, and DEP to participate in the development of this document	3/04

For More Information:

- 2000 Progress Report on the *Beyond 2000 Solid Waste Master Plan*, Massachusetts Department of Environmental Affairs at www.mass.gov/dep/bwp/dswm/files/swpr01.doc



III. Project Organization

Management Support and Involvement

Management support and involvement are **key** to the success of any project. A clear mandate from, and active involvement by, senior management sets the tone and example for the organization. The participation of management authorizes the work of the project and keeps source reduction “front and center”. Periodic public statements from leaders and chief executives will demonstrate their commitment, especially when they follow through with proper actions. Make sure that members from all levels of the organization understand the project goals and that they are on board and willing to do their part.

The Newton project had the enthusiastic support of the Mayor, who was a strong advocate throughout the duration of the project. The Project Manager had access to the Mayor, Chief Administrative Officer, and Commissioner of Public Works, and was able to call on them to take specific actions and to keep departments moving forward. The Mayor formally kicked-off the project by including it in one of his weekly press conferences and included the project on the agenda for his department head meetings.

In addition to promoting source reduction with department heads, the Mayor took the lead in advancing the project throughout City Hall by sending an email to city employees. The President of the Board of Aldermen, also a strong advocate for the project, named an alderman to the Source Reduction Advisory Committee. The Superintendent of Schools committed his department and sent an email to his staff to endorse the project. He allowed a presentation to be made at his Administrative Council meeting (school principals and assistant superintendents) as well as access to all school buildings and the School Department Environmental Management Team.

Keeping the program in the public eye is important and challenging. Finding ways for leaders and officials to regularly promote the project and get information distributed throughout the organization helps. Keep in mind that source reduction is only one, and perhaps not a priority, of many issues facing city departments. Some methods include: emails to all employees, posters, employee newsletters, visits to departments, and special events (such as Pollution Prevention Day described later), or showing of appropriate films.

The Source Reduction Team

The “team” approach to project implementation and problem-solving was a fundamental component in Newton’s source reduction program. Consisting of an employee from each department, team members brought a wide-variety of perspectives and job functions to the discussion. Team members served as the steering committee for the project and acted as the liaison with their own department, facilitating the flow of information to their colleagues.

The Mayor asked all department heads to appoint a representative to the team which would meet on a monthly basis to plan the project and coordinate efforts at the department level. Implementing a source reduction project requires committing some work time for team meetings and any related projects your team undertakes.

The following departments sent representatives to participate on the source reduction team: Assessing, City History Museum, Elections, Engineering, Executive, Fire, Health, Human Resources, Human Services, Information Technology, Inspectional Services, Law, Library, Parks and Recreation, Planning, Police, Public Buildings, Public Works, Purchasing, School, and Treasury.

A coordinator was hired to manage the project. The coordinator identified and distributed pertinent information, conducted training, and facilitated team meetings. The first Source Reduction Team meeting was attended by the Mayor who stressed the importance of the project. The first few meetings were dedicated to educating team members on the purpose of the project and preparing for developing a set of goals and actions.

One team objective was to develop a list of goals and actions that were realistic and that the organization could endorse. The team spent meetings brainstorming and then prioritizing action items. Look for obvious and easy-to-implement actions first and build upon those. Recognize that results won't appear overnight. For example, when identifying ways to save paper, start with actions like using the back side of the paper since it is easy to do and requires no infusion of money or equipment.

Developing goals and action items begins with brainstorming. Try to encourage as much involvement and as many ideas as possible and avoid evaluating. After the brainstorming stage, the team can create a list and begin to evaluate and prioritize. The ideas can be examined for a variety of criteria, such as how easy the ideas are to implement, potential cost savings, or which ones may need more research.

Materials from Newton's Source Reduction Project

1. Memo from the Mayor to City Employees

*"The City is embarking on a **Source Reduction Project** that is funded by the Massachusetts Department of Environmental Protection and the City of Newton and I call upon you to participate and support this important initiative. Source reduction promotes the more efficient use of goods and materials and the use of less toxic chemicals so there is less waste to manage. By reducing the amount of trash and toxic substances that go into the waste stream, we care for ourselves, the environment and our future, and reduce the financial costs devoted to waste management*

The project will initially focus on municipal departments and public schools and will eventually expand to work with the business community and residents. A Source Reduction Team, comprised of a representative from each department, will identify waste prevention opportunities and actions that will set the standard for all of us.

You can get more information on the project on the City's Intranet which will be regularly updated to include various articles, pollution prevention tips, and other information and resources".

2. Memo from Superintendent of Schools to Employees

"The City is embarking on an important Source Reduction Project. This project will be funded by the DEP and the City of Newton, and will be a model project for duplication across the state under the auspices of the Department of Public Works. This project initially focuses on municipal departments and public schools – eventually it will expand to work with local businesses and residents. You will be hearing more in the coming weeks and months.

Source reduction promotes more efficient use of goods and materials and use of less toxic chemicals so there is less waste to manage. By reducing the amount of trash and toxic substances that go into the waste stream, we care for ourselves, the environment and our future, and reduce the financial costs devoted to waste management. The Source Reduction Project will identify waste prevention opportunities and actins and encourage purchasing environmentally friendly products".

3. Team Agendas: The meeting agendas were posted on the wall on easel paper to eliminate duplicating.

November 2002 – Kick-Off <ul style="list-style-type: none"> • Mayor and DEP • Overview of source reduction & brainstorming • Power Point #1: What is Source Reduction 	February 2003 <ul style="list-style-type: none"> • Goals, actions & time targets • Waste assessment discussion • Power Point #4: Goals
December 2002 <ul style="list-style-type: none"> • Project overview, waste coordinator role, city utility and trash costs, brainstorming • Power Point #2: Brainstorming & Success Stories 	March 2003 <ul style="list-style-type: none"> • Goals and actions – prioritize • Waste assessment • EarthTunes
January 2003 <ul style="list-style-type: none"> • Ideas, draft goals & actions, waste assessment • Power Point #3: Waste Assessment 	May 2003 <ul style="list-style-type: none"> • Goals and timetables & reduction target • Waste assessment summary and Recycling

4. Employee Newsletter: The following two articles were published in the City's employee newsletter.

a) Source Reduction Team Formed



The Source Reduction “Green” Team of employees from municipal and school departments has been formed to work on the newly-implemented **Source Reduction Project**. The Source Reduction Team will identify and implement actions to reduce waste in the workplace.

The goal of the project is to identify ways to reduce the amount of materials and toxic substances that go into the waste stream and to shift to the purchasing of more environmentally friendly products and services. The project will serve as a prototype for duplication by other communities in Massachusetts through the production of a “How- To” manual that is expected to be completed in December of 2003.

Source reduction is a growing effort to curb the amount of waste that communities need to manage. Last year, approximately **56,000 tons** of waste was generated in Newton at a cost of **\$6,000,000** for removal. Historically, attention has been focused on promoting recycling and Newton's recycling rate is nearly 46%. Now the focus is shifting to trying to attain more sustainable communities by using just plain using less.

An outreach program to work with residents and businesses is being formed and will be launched in the spring. For more information contact Linda Walden at x1005 or check out the intranet (<http://192.168.0.22>). Let us hear your source reduction ideas!

b) Source Reduction

Source Reduction: What it Is and Why it's Important

The City of Newton is a forerunner in environmental programs, starting with the first Recycling Program 30 years ago. Now, Newton is launching a Source Reduction Project to find ways to reduce the amount of waste and harmful chemicals that go into the waste stream. The project, which is jointly funded by the Department of Environmental Protection and the City, will work with municipal and school departments, residents, and businesses to identify ways to prevent pollution and to purchase more environmentally friendly products. Cost savings from this program can be diverted to other programs such as education, health and public safety.

Too Much Trash

- Americans generate 4 pounds of trash per person per day, a rate that has doubled since 1950.
- The U.S. generates 3.5 billion pounds of carpet waste yearly – enough to carpet 219 malls the size of Mall America.
- The U.S. generates 28 billion pounds of food waste each year. McDonald's, Wendy's, and Burger King combined sell less food than that.
- The 19 billion pounds of packaging peanuts trashed each year would fill 7 Metro Dome stadiums.
- The City of Newton spends \$6 million dollars a year on solid waste management.

Reuse and Recycle

Between 1995 and 2002, the recycling rate in Newton increased from 39.8% to 43.5%. Of the nearly 53,000 tons of waste produced in 2002, about 23,000 tons were recyclables.

Reduce

Recycling is not enough! Source Reduction is the **first** "R" strategy in solid waste management followed by Reuse and Recycle. *If waste is not created, it does not need to be recycled or disposed of.*

Waste reduction programs maximize the use of materials before they are recycled or thrown away:

- **Using** reusable instead of disposable materials
- **Eliminating** a particular item altogether
- **Repairing** or maintaining equipment
- **Buying** more durable products
- **Buying** recycled products



Benefits of Source Reduction

The City will reap a number of benefits from waste prevention efforts.

- **Cost Savings** - Waste prevention saves dollars through changes in operations, more conscientious use of supplies and products, and purchasing environmentally preferable products.
- **Safer Buildings and Schools** - Eliminating hazardous materials from municipal buildings and schools by purchasing less or non-toxic products reduces exposure to hazardous chemicals.
- **Resource Conservation** - Buying environmentally friendly products reduces the use of natural resources, supports markets for recycled materials, and stimulates business opportunities.
- **Improving Quality of Life** – Source reduction reduces traffic congestion and air emissions, prevents contamination of water supplies, and preserves non-renewable resources and habitat.

How You Can Help

Please work with us. It will take our combined efforts to make the world a safer and cleaner place to live and work and to save valuable resources. In the next few weeks, a Source Reduction Team will begin to work on identifying and implementing ways that we can prevent waste. If you have ideas on how to prevent waste or for more information on the project, contact the Source Reduction Coordinator at extension 1005.



David B. Cohen, Mayor
Robert Rooney, Public Works Commissioner

cSources: Minnesota Office of Environmental Assistance; U. S. Environmental Protection Agency; Congressional Research Services

5. Training Modules: Power point presentations, used frequently at team meetings, are listed in the matrix below along with the sources of information from which the information was gathered.


a) List of Modules & Sources of Information

Power Point Module	Resource
1) What is Source Reduction? 2) Project Overview 3) What is a Waste Assessment? 4) Source Reduction Goals	<p><u>Source Reduction NOW</u>, Minnesota Office of Environmental Assistance, www.moea.state.ma.us</p> <p><u>Source Reduction and Your Community</u>, U. S. Environmental Protection Agency, www.epa.gov</p> <p><u>National Pollution Prevention Resource Guide</u>, U.S. Environmental Protection Agency, www.epa.gov</p> <p><u>Profiting From Source Reduction</u>, Alameda County Source Reduction and Recycling Board, www.stopwaste.org</p> <p><u>Waste Reduction Policies and Procedures for State Agencies</u>, California Integrated Waste Management Board, www.ciwmb.ca.gov/Publications</p>
5) Pittstops: Fleet Maintenance	<p><u>Pittstops Manual</u>, New Hampshire Pollution Prevention Program, Department of Environmental Services, www.des.state.nh.us/nhppp</p> <p><u>Profit Through Prevention: Best Management Practices for Fleet Maintenance</u>, U. S. Environmental Protection Agency, www.epa.gov/region09/p2/autofleet</p>
6) Environmentally-Preferable Purchasing	<p><u>Resourceful Purchasing: A Hands-on Buyer's Manual</u>, Alameda County Source Reduction and Recycling Board, www.stopwaste.org</p> <p><u>Recycled and Environmentally Preferable Products and Services Guide</u>, Massachusetts Department of Environmental Protection Operational Services Division, www.mas.gov/osd/enviro</p> <p><u>State and Local Pioneers: How State and Local Governments Are Implementing Environmentally</u>, U. S. Environmental Protection Agency, www.epa.gov/opptintr/epp/pubs/statenlocal.pdf</p> <p><u>Preferable Purchasing Practices</u>, <u>General EPP Training Tool</u>, and <u>EPA Purchasing Tool Suite</u>, U.S. Environmental Protection Agency, www.epa.gov/oppt/epp/gentt/index.htm</p>
7) Source Reduction: It's Good for Business	<p><u>RE-Think Your Bottom Line</u>, Alameda County Waste Management Authority www.stopwaste.org</p> <p><u>Buy Recycled: A Guide for Massachusetts Businesses</u>, Waste Cap, www.wastecap.org</p> <p><u>Reduce, Reuse, Recycle – It's Good Business</u>, California Integrated Waste Management Board, www.ciwmb.org</p> <p><u>WasteWise</u>, U. S. Environmental Protection Agency, www.epa.gov/wastewise</p>

b) Power Point Modules: The various power point modules used in the project follow.

Source Reduction Team Modules: The first four presentations were used in the source reduction team meetings.

#1 What is SOURCE REDUCTION?

<h4>Source Reduction Team</h4> <p>November 15, 2002</p> <h5>Agenda</h5> <ol style="list-style-type: none">I. Welcome and IntroductionsII. What is Source Reduction?III. Benefits of Source ReductionIV. SR Success StoriesV. Logistics and Next Meeting	<h4>What is SOURCE REDUCTION?</h4> <p>Eliminating, <i>at the source</i>, the use of materials and the generation of pollution and waste by...</p> <ul style="list-style-type: none">• Reducing the amount of materials used• Using refillable, repairable, and durable products• Reducing the toxicity of materials used
<h4>THE 3 "R" s</h4> <p>Source Reduction is the first "R" in Reduce, Reuse, Recycle</p> <div><div><i>From This...</i></div><div><i>To This...</i></div></div> <div><div>Recycle Reuse Reduce</div><div>Reduce Reuse Recycle</div></div>	<h4>REDUCE, REUSE then RECYCLE</h4> 
<h4>BENEFITS of SOURCE REDUCTION</h4> <ul style="list-style-type: none">➤ Cost Savings - Saves money through operational changes and the conscientious use and purchase of environmentally friendly products.➤ Safer Buildings and Schools - Creates safer buildings by using less hazardous or non-toxic products.	<h4>Source Reduction Success Stories</h4> <p>Examples of source reduction successes from communities across the country.</p>

Itasca County Minnesota

Action:

- ✓ Reusable air filters, cups, cloth towels
- ✓ Reduced junk and duplicate mail
- ✓ Used florescent bulbs
- ✓ Double-sided coping
- ✓ Soap and water as a degreaser
- ✓ Durable, repairable products

Savings:

- ✓ 13% reduction in waste
- 122 cubic yards
- 9,255 pounds
- ✓ \$46,544/year

Integrated Waste Management Board California

Action: Office Paper Reduction

- avoiding excess printing
- using email v.s. paper mail
- copying on both sides of paper
- reducing size of documents
- pruning mailing lists

Savings:

- 1.8 million sheets of paper
- \$16,724 - postage, \$68,370 - copying, \$10,151 - purchasing, \$5,500 - printing

Tulaton High School Oregon

Action

- ✓ Double-sided copying
- ✓ Use more bulletin boards, fewer posters
- ✓ Use of mulching mower
- ✓ Use remanufactured laser cartridges
- ✓ Use cleaning solutions in concentrate
- ✓ Use energy-efficient building design

Savings

- = \$1,260
- = \$458
- = \$10,000
- = \$1,200
- = \$300
- = \$35,000

Jackson County Missouri

Action: Used truck motor oil to heat Parks & Recreation Department

Savings: 900 gallons of fuel per year

Action: Used recycled or remanufactured products

Savings: \$121,000 yearly

Action: Paper reduction

Savings: \$18,969 yearly

King County Washington

Action: Electronic Office Surplus Exchange

Savings: redistributed items valued at \$1.5 million and reused 4,000 tons of materials

Action: Purchasing environmentally-friendly products

Savings: \$585,000

King County Washington

Action: Bus Rebuild - inserted their own rebuilt engines into 100 new trolleys chassis

Savings: \$20 million

Materials In...Materials Out

In the past we responded to the "out" phase...

➔ **How do we handle all this stuff?**

Now we need to think about the "in" phase...

➔ **How do we reduce all this stuff?**

SOURCE REDUCTION & SUSTAINABILITY

Source reduction and recycling are integral to a society that is environmentally, economically and socially sustainable over the long-term.

#2 PROJECT HIGHLIGHTS

Project Highlights

X Expand Program to Residents & Businesses

- encourage residents and businesses to implement waste prevention practices

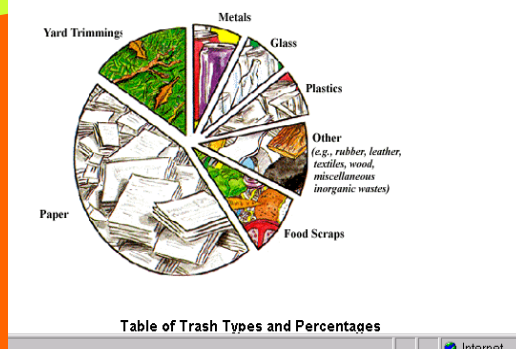
X Create a Guidebook

- "How-To" manual for use by other Massachusetts cities and towns

Waste Prevention Coordinator "Job Description"

- ★ Coordinate department-level waste prevention activities.
- ★ Conduct waste prevention assessments.
- ★ Identify waste prevention opportunities.
- ★ Work with department staff to implement wastes prevention activities.
- ★ Identify alternative products.
- ★ Coordinate with purchasing department to buy environmentally preferable products.

America's Trash



Too Much Trash

- **3.5 billion pounds** of carpet waste - enough to carpet 219 malls the size of Mall America.
- **28 billion pounds** of food waste generated each year - McDonalds, Wendys and Burger King **combined** sell less food than that.
- **19 billion pounds** of packing peanuts each year - enough to fill 7 Metrodome stadiums

City Government Utility Costs FY01

• Diesel	\$114,524
• Electricity	\$1,224,111
• Fuel Oil	\$150,564
• Gasoline	\$189,911
• Natural Gas	\$257,744
• Water & Sewer	<u>\$167,433</u>
	\$2,104,287
• Postage	\$73,535

Sustainability

In a sustainable society....

- Materials are not taken from the earth faster than nature can produce them
- There is no over-harvesting of resources
- There is no production of substances faster than they can be broken down
- Basic human needs are met

from Sustainable Step, New England

How Do We Get There?

- It's gonna take everybody
- It's gonna take forever
- So we might as well get started!

We've Already Started!

- ☉ 10% price preference for recycled paper.
- ☉ 30% minimum recycled content for white
- ☉ Board of Alderman resolution supports the Producer Take-Back Campaign to require manufacturers to take back used electronics.
- ☉ Custodians have switched to green cleaning products.
- ☉ Teachers not to bring in household cleaners chemicals.
- ☉ 5% discount on coffee for using your own mug in café.

General Principles of Source Reduction

- **Conserve** resources
- **Improve** operations - purchasing, equipment changes, housekeeping, how we do business
- **Increase** efficiency in the use of raw materials, energy, water or other resources
- **Reduce** hazardous substances

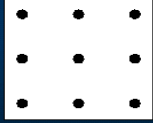
Brainstorming *ALL ideas are good ideas*

- Do we need it in the first place?
- What single-use items can be replaced with reusable items?
- Can toxic substances be eliminated or replaced?
- Will buying in bulk reduce waste?
- Is there a recycled alternative?

Connect the Dots....

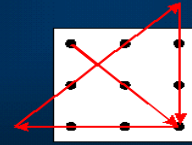
P2 in Action: Perspective

- Connect the dots
- 4 straight lines
- Continuous (don't lift pen from paper)



P2 in Action: Perspective

- Think outside the box!



#3 WHAT is a WASTE ASSESSMENT?

Source Reduction Team January 9, 2003

Agenda

- I. Snacks
- II. Waste Assessment
- III. Brainstorming & Goals and Actions

What is a Waste Assessment?

-an assessment of operations and services-

WHY: To determine how reduction activities are impacting operations, services and waste streams.

WHAT: To quantify amounts and types of materials we throw away and to review operations and services from a waste reduction perspective.

- Analysis of materials flow and processes
- Are materials used efficiently?
- Identify opportunities to reduce materials

How to do a Waste Assessment

- Facility walk-through
- Review purchasing and trash disposal records
- Sorting waste

-from Oregon Department of Environmental Quality

Developing an Action Plan

• How?

- 1) SR Team members to organize department
- 2) Data sheet filled out by each staff person
- 3) SR Team member collates department info
- 4) SR Coordinator collates all department info

• When?

During month of March

...Summary of Steps...

- What to Measure?
- What is Monitoring Period?
- Define Data Sources
- Collect Baseline Data
- Implement Reduction Activity
- Collect Post-efficiency Data
- Compare Data and Costs

—from Oregon Department of Environmental Quality

#4 SOURCE REDUCTION GOALS

Source Reduction Goals

Summary of Brainstorming

- 2-sided printing
- faxes to computer instead of hard copy
- reduce junk mail
- larger monitors for easier reading & editing of documents on line
- more use of email
- increase use of Intranet
- permitting software for all departments
- plans and specs on cd-rom

Goal 1: Paper Use

To reduce the amount of paper consumed.

ACTIONS:

- automatic double-sided copying
- reduce before copying
- smaller margins and font
- rigorous on-line editing before printing
- larger monitors for easier reading & editing
- replace paper correspondence with email
- faxes to computer v.s. printing hard copy
- group & committee mailings electronically

Goal 2: Junk Mail and Publications

To reduce the amount of junk mail, newspapers and publications received.

ACTIONS:

- inventory junk mail, publications and newsletters received in each department
- identify which mailings to totally eliminate
- identify which publications can be shared

Goal 3: Environmentally-Preferable Purchasing

To promote the purchase and use of environmentally-friendly products and services.

ACTIONS:

- reduce purchases
- stricter inventory control
- standardize purchasing
- include: paper and office supplies and equipment, janitorial, automotive, and building supplies

Goal 4: Recycling

To increase opportunities for recycling.

ACTIONS:

- increase paper recycling bins in City Hall
- add bins for recycling plastics and bottles
- educate staff about recycling
- use recycled anti-freeze, motor oils, re-treaded tires
- establish electronic clearinghouse of surplus office supplies for exchange with other departments

Goal 5: Green Buildings

To create safer and healthier public buildings and workplaces.

ACTIONS:

- identify ways to reduce energy & water consumption
- eliminate hazardous cleaning products
- replace toxic cleaning agents in vehicle operations
- determine feasibility of switching to more energy efficient office equipment

Action Items

- Review goals and send comments by 1/23
- Think about presentations to each department
- Next meeting: Thursday, 2/6 at 1:00

#5 PITSTOPS: FLEET MAINTENANCE: This presentation was used in a meeting with the fleet mechanics.

Pitstops

The following information is taken from the Pitstops Manual, Best Management Practices for Automobile Service Facilities produced by the New Hampshire Department of Environmental Services

I. Solvents

Recommendations

- Use non-hazardous solvents whenever possible
- Cloth absorbents should be wringable & reusable
- Decant liquid in bottom of drum into waste solvent collection drum
- Collect, store & transport in appropriate containers

I. Solvents

Recommendations

- E. Do not air-dry soiled towels
- F. Do not use towels to pick up hazardous spills
- G. Do not put towels in collection system
- H. Do not launder towels on your own or at home
- I. Do not allow towels in drum to contact liquid

A. Carburetor Cleaners

Recommendations

- A. Use non-hazardous cleaners if possible
- B. Segregate from other wastes
- C. Use sparingly and don't use sprays
- D. Save and add to heavy parts cleaner
- E. Distill with other solvents

B. Parts-Washing Solvents

Recommendations

- A. Never mix or add solvents to oil
- B. Never use gasoline as a cleaner or solvent
- C. Use only when needed
- D. Look for alternative cleaning methods

B. Parts-Washing Solvents

Recommendations

- E. Never dispose into drains, the ground or air
- F. Keep lids of cleaning tanks tightly closed and away from heat and drafts to minimize product loss
- G. Consider using a solvent supplier who will pick up and recycle solvents

II. Oil Waste

Recommendations

- A. Store in appropriate tanks; consider secondary containment
- B. Locate containers away from surface waters
- C. Close & seal containers when not being used
- D. Do not mix with other hazardous wastes

II. Oil Filters

Recommendations

- A. Drain before disposal by tipping into collection tray
- B. Empty hot drain, crush, puncture at anti-drain valve oil filter presses help crush and remove oil
- C. Recycle through a scrap yard or oil filter recycler
- D. Do not dispose with solid waste

III. Paint Waste

Recommendations

- A. Do not create your own mixtures.
- B. Keep paint and paint thinner wastes separated.
- C. Thinners can be reclaimed and should be used until capabilities are lost.
- D. Buy only the amounts you need.

III. Paint Waste

Recommendations

- E. Cover with plastic wrap and tightly replace lid. Store upside down to create a tight seal around the lid.
- F. Donate or exchange unused paint.
- G. Air dry left-over latex paint & discard in trash.
- H. Latex paints eliminate solvents and thinners.
- I. Use equipment with low overspray
- J. Keep nozzles clean replace damaged nozzles.

III. Paint Waste

Recommendations

- K. Use proper primer gun.
- L. To reduce VOC emissions, use minimal amount of primer-surfacer.
- M. Use high solids/low VOC topcoats.
- N. Keep paint additives to a minimum.
- O. Avoid use of laquer-based topcoats.

IV. Aqueous Waste Streams

Recommendations

- A. Prevent spills
- B. Clean spills with drip pans and absorbents
- C. Clean bays with non-toxic, biodegradable soap
- D. Maintain oil/water separators at all times

V. Other Waste Streams

A. Aerosol Cans

- 1) Use all material in the can
- 2) Recycle empty cans
- 3) Eliminate aerosol cans
- 4) Use refillable spray containers or portable parts wash units

V. Other Waste Streams

B. Antifreeze

Contains ethylene glycol which is toxic

- 1) Replace only when necessary
- 2) If good antifreeze is removed for repairs, save and reuse
- 3) Store used antifreeze in structurally sound containers
- 4) Do not mix with other waste streams

V. Other Waste Streams

C. Asbestos Brake Pads

- 1) Clean with OSHA & EPA approved equipment before disassembly
- 2) Transport in closed containers and avoid tipping, spilling, or breaking
- 3) During storage prevent airborne contamination and human exposure
- 4) Do not use compressed air to clean
- 5) Never grind brake shoes or pads

V. Other Waste Streams

D. Batteries

- 1) Maintain battery fluid at proper level
- 2) Can distilled or deionized water be used to extend life of battery?
- 3) Corroded brackets contribute to battery shifting and vibration damage
- 4) Use a water/baking soda mixture to clean connections

V. Other Waste Streams

D. Batteries

- 5) Use heavy grease or corrosion prevention product on posts to retard accumulation of corrosion
- 6) Store spent batteries on acid-resistant surface, away from flammable liquids, ignition sources and drains

V. Other Waste Streams

E. Freon

Depletes the ozone layer

- 1) Technicians should be certified to handle freon
- 2) Repair rather than “top off” leaking systems
- find the leak and repair before recharging

#6 ENVIRONMENTALLY-PREFERABLE PURCHASING: This presentation was used in a meeting with the staff from each department who had responsibility for ordering supplies.

Environmentally Preferable Purchasing

Why EPP?

Source reduction strategy - eliminating, *at the source*, the use of materials and the generation of pollution and waste by...

- **Reducing** the amount of materials used
- **Using** refillable, repairable, durable products
- **Reducing** the toxicity of materials

What is EPP?

Environmentally Preferable Products

have a **lesser** or **reduced** negative effect on human health and the environment when compared with competing products that serve the same purpose.

Attributes and Factors.....

- raw materials used in product
- production process
- packaging
- distribution
- maintenance
- reuse
- disposal
- energy efficiency
- recycled content
- resource conservation
- greenhouse gas emissions
- waste prevention
- adverse effects to workers, animals, plants, air, water, soil

For Example...

- Refillable pens instead of single-use pens
- Paper products with recycled content...manila folders, writing pads, calendars, spiral notebooks
- Remanufactured, refillable toner cartridges
- "Green" cleaning products

Some Municipal Success Stories

Itasca County, Minnesota

Action:

- ✓ Reusable air filters, cups, towels
- ✓ Used florescent bulbs
- ✓ Double-sided coping
- ✓ Used soap and water as a degreaser
- ✓ Used long-life, repairable products

Savings:

- ✓ 13% reduction in waste
- 122 cubic yards
- 9,255 pounds
- ✓ \$46,544/year

Jackson County, Missouri

Action: Recycled/remanufactured products
Savings: \$121,000 yearly

King County, Washington

Action: Electronic Office Surplus Exchange
Savings: Redistributed items valued at \$1.5M
and reused 4,000 tons of material

Action: Purchase environmentally-friendly
products
Savings: \$585,000

We've Already Started!

- ⊖ 10% price preference for recycled paper.
- ⊖ Purchase paper with at least 30% recycled content.
- ⊖ Custodians using green cleaning products.
- ⊖ Public Works Department consolidating purchasing of all divisions.

Tips for Getting Started

- Have a written policy
- Price preferences for environmentally-friendly products and services
- Performance requirements
- Lifecycle cost evaluation
- Approved product lists

It Starts With Us

"Through the numerous small choices we make everyday, large amounts of waste can be prevented."

- Source unknown

#7 SOURCE REDUCTION: It's Good For Business: This presentation was designed for businesses.

SOURCE REDUCTION: It's Good For Business



Eliminating, *at the source*, the use of materials and the generation of pollution and waste by...

- Reducing the amount of materials used
- Using reusable and durable products
- Reducing the toxicity of materials used

The 3 "R's"



- ① REDUCE
- ② REUSE then
- ③ RECYCLE

BENEFITS of SOURCE REDUCTION

- **Cost Savings** - through changes in operations and the use of environmentally friendly products.
- **Safer Workplaces** - by using less hazardous or non-toxic products.
- **Quality of Life & Resource Conservation** - by reducing air & water pollution, preserving resources & habitat, and creating a more resilient environment.

Success Stories

Examples of source reduction successes in businesses and communities across the country.

Itasca County, Minnesota

Action:

- ✓ reusable air filters, cups, and cloth towels
- ✓ reduced junk and duplicate mail
- ✓ used florescent bulbs
- ✓ double-sided coping
- ✓ soap & water as a degreaser on auto parts
- ✓ used long-life, repairable products

Savings:

- ✓ 13% reduction = 9,255 pounds of trash
- ✓ \$46,544/year

General Motors, North America

- ✓ 22% waste reduction in the first 6 months
- ✓ 64% increased recycling - 50,000 tons to 82,000 tons
- ✓ 15%-30% decrease in waste management costs

Waste Management Board, California

Action: Office Paper Reduction

- ✓ avoid excess printing
- ✓ double-sided copying
- ✓ use email v.s. paper mail
- ✓ reduce size of documents
- ✓ prune mailing lists

Savings:

- ✓ 1.8 million - sheets of paper
- ✓ \$100,700 - mailing, copying, purchasing

Jackson County, Missouri

Action: Heat Parks & Recreation Department
with used truck motor oil

Savings: 900 gallons of fuel per year

Action: Recycled/remanufactured products

Savings: \$121,000 yearly

Action: Paper reduction

Savings: \$18,969 yearly

America's Trash

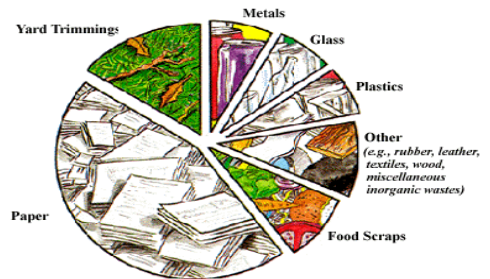


Table of Trash Types and Percentages

Internet

Too Much Trash

Each Year...



- **3.5 billion pounds** of carpet waste - enough to carpet 219 malls the size of Mall America.

- **28 billion pounds** of food - McDonalds, Wendy's and Burger King **combined** sell less food than that.

- **19 billion pounds** of packing peanuts - enough to fill 7 Metro dome stadiums.



- The U.S. consumes **25% of the earth's resources** with only 5% of total population.

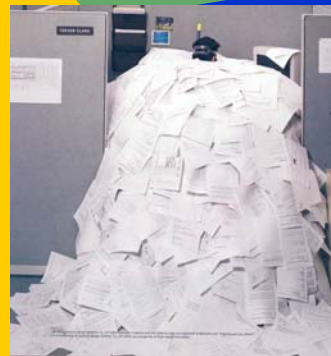
- 1950 - 1990, the trash generated by each American increased from **2 to 4 pounds per day**.

- Countries with similar standards of living, generate only **2 pounds per day per person**.

Source Reduction Goals

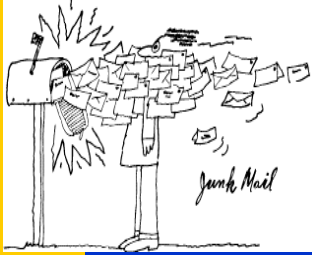
#1. Paper, Paper Everywhere....

ACTIONS:



- stop mass distribution of printed materials
- purge mailing lists
- computerized letterhead
- circulate memos instead of copying to all staff
- reusable envelopes
- increase use of on-line forms and permits
- use bulletin boards
- group & committee mailings electronically

#2: Reduce junk mail, newspapers, and publications.



ACTIONS:

- eliminate unnecessary or duplicate publications
- increase sharing of publications

#3: Purchase environmentally-friendly products and services.



ACTIONS:

- encourage purchase of EPP
- promote vendor use of products and services that are environmentally-friendly

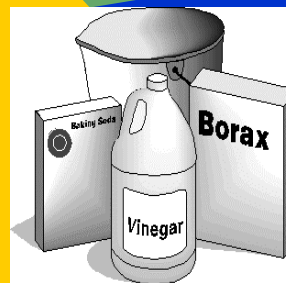
4: Increase Recycling



ACTIONS:

- increase paper recycling bins
- add bins for recycling plastics and bottles
- use recycled anti-freeze, motor oils, re-treaded tires
- establish electronic clearinghouse of surplus office supplies

#5: Safer and healthier buildings.



ACTIONS:

- reduce energy & water consumption
- eliminate hazardous cleaning products
- replace toxic cleaning agents in vehicle operations
- determine feasibility of switching to more energy efficient office equipment

It Starts With Us

"Through the numerous small choices we make everyday, large amounts of waste can be prevented."

- Source unknown



IV. Policy - Goals - Timetables

Developing a set of goals will help to guide your project, keep everyone moving in the same direction, and provide information from which progress can be evaluated. Establishing goals and timetables was one of the more time-consuming activities, taking up several meetings of the source reduction team. Following the preparation of an initial list, goals were reviewed and approved by other levels of the organization with ultimate imprimatur of the Mayor.

In Newton, in addition to developing a source reduction policy, this process began with team members brainstorming, then prioritizing those possibilities. The team considered cost, practicality, and time involved with each activity. Once a realistic set of goals and actions was identified, the team established a timetable for achieving them. Once we had a draft, it was distributed for review to the Public Works Commissioner, Chief Administrative Officer and Mayor. The goals that the team identified to work on were: 1) Reduce Paper Use, 2) Reduce Junk Mail and Publications, 3) Increase Recycling, 4) Promote Purchase of Environmentally-Friendly Products, and 5) Promote Green Buildings.

Since the Purchasing and Public Buildings Departments were responsible for items 4 and 5, the team decided to focus on the paper, junk mail, and recycling items, while the project manager worked on the other items with those departments.

A. Reducing Paper

Paper reduction actions were divided into four subsets of activities. Over the course of four consecutive months, the Chief Administrative Officer sent emails to department heads instructing them on the specific set of actions they were to implement during a given month. At the end of each month, the department heads were to complete a brief report indicating which actions were completed and, if any were not, the problems encountered. The greatest problem was getting departments to respond on their activities, given their own workloads, but for those who did, most of the activities were implemented.

B. Junk Mail

The junk mail industry consumes enormous amounts of resources. It is estimated that the U.S. Postal Service delivers 17.8 million tons of bulk mail each year, 44% of which is thrown away or unopened. The City implemented a “Junk Your Junk Mail” campaign inviting residents, businesses, and employees to reduce the amount of junk mail received. Each department was asked to list the junk mail and publications received and to take steps to eliminate duplicate copies and unnecessary mail. Some of the information gathered and results included:

- Many departments were receiving multiple copies of publications. For example, four departments were collectively receiving 102 copies of 60 publications.
- To reduce the numbers of copies of publications, more departments instituted sharing policies.
- The public library was removed from over 300 mailing lists.

C. Increase Recycling

Although many employees were active recyclers, it had been 14 years since the City had conducted a formal recycling education outreach with City and School Department employees. A Recycling and Source Reduction Outreach Campaign was launched in which the Director of Environmental Affairs and the Recycling and Source Reduction Coordinators met staff in each department. We discussed the types of items that could/could not be recycled and distributed flyers listing recyclable items and the source reduction

goals for posting in each department. Each employee who attended received a recycled plastic mug with the “Reduce, Reuse, Recycle” logo emblazoned on it.

Materials from Newton’s Source Reduction Project

1. Source Reduction Policy: The City adopted this policy developed by the Source Reduction Team.

SOURCE REDUCTION POLICY

Consistent with Newton’s strong environmental leadership, the City establishes this policy to enhance the protection of the environment and public health. The City strives to:

- eliminate negative environmental and health impacts;
- improve the environmental, economic, and public health of the community;
- conserve and protect natural resources for future generations.

The City adopts Source Reduction as the most environmentally and economically sound approach to solid waste management. The City will:

- minimize the amount and toxicity of waste generated by municipal and school departments;
- implement practices that promote sustainable uses of energy, water, and other natural resources;
- support markets for recycled materials through recycling and the procurement of recycled content products.

2. Environmentally Preferable Purchasing Policy: This policy had not been adopted as of project completion.

Environmentally Preferable Purchasing Policy and Guidelines

I. Policy

Consistent with Newton’s strong environmental leadership, the City establishes this policy to enhance the protection of the environment and public health. The City of Newton is committed to ensuring the purchase of the most environmentally preferable products and services in order to prevent waste, reduce toxicity, conserve energy and water, and incorporate recycled content material. The City strives to minimize adverse environmental impacts and conserve and protect natural resources for future generations. The City wishes to serve as a model for others to make environmental criteria a component of their purchasing decisions. The City seeks to encourage the development of more environmentally benign products and services.

II. Purchasing Guidance

A. Products and Price Preference

To the maximum extent possible, City and School Departments shall purchase products that have a lesser or a reduced negative effect on human health and the environment when compared with competing products that serve the same purpose. If necessary, departments are allowed a price preference of up to 10% over the price of comparable products that have lesser environmentally benign qualities in order to achieve this goal.

B. Factors in Product Selection

The following factors will be considered in the selection of products and services: pollutant releases, waste generation, recycled content, energy consumption, depletion of natural resources, potential impact on human health and the environment, biodegradability

C. Preference for Recycled Products

To the maximum extent possible and with quality and availability being comparable, the City shall buy recycled content products rather than non-recycled content products. The City shall:

- 1) Purchase products with the greater recycled content.
- 2) Require recycled content information for all products purchased.
- 3) Purchase products that prevent waste by purchasing high-quality, durable products.
- 4) Purchase products with no packaging, less packaging, or reusable packaging.

D. Toxic Chemicals in Cleaning Products

The City seeks to minimize exposure to and use of toxic chemicals in order to reduce health-related problems and environmental contamination. For example, products shall: minimize adverse affects to indoor air quality; reduce skin and eye irritation; be free of carcinogenic ingredients.

E. Packaging

The City favors products with minimal packaging, recycled packaging, or packaging that is easily recycled, and products that are available as a concentrate, or that in any other way promote waste prevention. No aerosol cans shall be purchased unless necessary.

F. Minimum Post-Consumer Content

Attachment A specifies the minimum recycled content which the City has adopted for some commonly used products. This list is not intended to be comprehensive and the specifications may change from time to time as more and better products become available. These specifications are taken from the Commonwealth of Massachusetts mandatory purchasing specifications. This list will be periodically reviewed and updated by the City of Newton Purchasing Agent. For easy reference to products that meet these specifications, vendors and products are provided.

G. Purchasing Process

1. Tracking Environmentally Friendly Products

In order to insure the City's ability to keep thorough and accurate records of product purchases against which to measure our progress in meeting these goals, departments shall insure that purchase forms are fully completed before being submitted to the Purchasing Department. Incomplete forms will not be processed and will be returned to the respective department.

2. Outside Vendors – Bid Process

The City will promote and support the purchase of environmentally-friendly products and services by outside vendors and may give preference to vendors who offer such products. Suppliers and contractors will be required to submit detailed information regarding the environmental impact of products they propose to use and for any services they propose to execute.

Guidance on Select Products

Product

Minimum Post-Consumer Content

1. Paper and Office Supplies

- | | |
|---|-------------------|
| a. printing and writing papers, forms,
computer paper, envelopes | 30% post-consumer |
| b. file folders | 10% post-consumer |
| c. writing tablets, message pads | 20% post-consumer |
| d. desktop accessories | 25% plastic |
| e. toner cartridges | remanufactured |

2. Janitorial Supplies

- | | |
|-----------------------|--|
| a. paper towels | 100% recycled; 40% post-consumer |
| b. toilet tissue | 100% recycled content; 20% post-consumer |
| c. napkins | 100% recycled; 30% post-consumer |
| d. plastic trash bags | 20% post-consumer |
| e. cleaning supplies | see guidelines above |

3. Automotive Products

- | | |
|-------------------------|---|
| a. anti-freeze | 100% recycled ethylene glycol or propylene glycol |
| b. re-refined motor oil | 50% re-refined base stock |

4. Flooring/Facilities Products

- | | |
|--------------------------------|---------------------------|
| a. rubber matting and flooring | 80% post-consumer content |
| b. compost bins | 50% post-consumer content |
| c. carpeting | 25% recycled nylon |

5. Office Equipment

must meet federal Energy Star power guidelines;
manufactured out of the maximum amount of recycled content

3) Source Reduction Goals and Targets: These goals and timetables were prepared by the Source Reduction Team and adopted by the City.

Source Reduction Goals and Targets

The following is a summary of the goals that have been developed by the Source Reduction Team as the initial focus City's source reduction initiative. These are intended to be phased in over the project period which ends in June of 2004

Goal 1: Paper Use

decrease by 15%

To reduce the amount of paper used.

- A. Automatic double-sided copying
- B. Replace paper correspondence with email
- C. More use of centralized bulletin boards
- D. Use smaller margins & font and rigorous editing
- E. Use computerized letterhead
- F. Purge mailing lists
- G. Send mailings electronically
- H. Circulate memos rather than give copies to each staff
- I. When envelopes are needed, use inter-office envelopes
- J. Use sticky fax notes rather than full cover sheets
- K. Centralize filing systems
- L. Increase the use of forms and permits on-line
- M. Create electronic departmental telephone directory
- N. Use the unused side of paper for drafts, notepads, etc

Goal 2: Junk Mail

decrease by 15%

To reduce the amount of junk mail, publications, newspapers.

- A. Inventory junk mail, publications, and newspapers
- B. Identify which mailings to eliminate.
- C. Convert to electronic versions of publications

Goal 3: Environmentally Preferable Purchasing

no specific target

To promote environmentally friendly purchasing.

- A. Strengthen language in bid documents to encourage vendors and contractors to use environmentally-friendly products
- B. Develop specific targets for: paper and office supplies/equipment; janitorial supplies automotive products; building supplies
- C. Replace single-use products with those that have longer life and that can be repaired such as: reusable cups, rechargeable batteries, recycled air filters, refillable pens

Goal 4: Recycling

increase by 15%

To provide more opportunities for recycling.

- A. Increase the number of paper recycling bins in City Hall.
- B. Add bins for plastics and bottles.
- C. Use recycled anti-freeze, motor oils, and re-treaded tires.
- D. Establish an electronic clearinghouse of surplus office supplies and products for exchange with other departments.
- E. Central battery collection point.
- F. Use reusable food containers/mugs.

Goal 5: Green Buildings**no specific target****To create safer and healthier public buildings and workplaces.****A. Hazardous Chemicals**

- 1) Implement mercury thermometer exchange for employees
- 2) Eliminate harmful cleaning products
- 3) Replace toxic cleaning agents in vehicle cleaning and maintenance

B. Equipment

- 1) Inventory electronic office equipment for energy efficiency
- 2) Determine feasibility of switching to higher energy efficient equipment

C. Assessment

- 1) Develop tool to evaluate energy and water consumption
- 2) Identify ways to reduce energy and water consumption

Other Source Reduction Actions

There are a number of additional source reduction actions that can result in cost expenses.

As the City's budget situation improves, some of those may be considered: Some examples:

- 1) purchase of more scanners
- 2) upgrade printers to allow for double-sided printing
- 3) allow for price preference for environmentally-friendly products

For More Information:

- "Selecting Waste Reduction Strategies" from Establishing a Waste Reduction Program at Work, California Integrated Waste Management Board at www.ciwmb.ca.gov
- Source Reduction Program Potential Manual: A Planning Tool, U.S. EPA at www.epa.gov/epaoswer/non-hw/muncpl/sourcred.htm
- "Community Tool Kit", Oregon Department of Environmental Quality at www.deq.state.or.us/wmc/solwaste/etods.html



V. Waste Measurement

Measuring the savings achieved from source reduction demonstrates the impact of pollution prevention programs and provides concrete evidence to employees their participation is important. Before results can be shown, baseline data will need to be collected. Information about the purchase and disposal of goods and products are needed to establish a baseline and to develop a measurement process. A baseline provides the information against which subsequent measurements can be compared to determine the effectiveness of any source reduction actions that have been undertaken.

Waste assessments can be conducted in a variety of ways, tailoring the process to the organization. The assessment can be as basic or as complicated as you wish. Waste can be measured by types of items, volume, weight, or source of waste generation. Some organizations have simply done a “walk through” during which employees tour an office or plant and record what they see. Others create more detailed assessments in which precise measurements are taken. In order to do comparisons, several assessments will need to be done over a period of time. This is the one area with which the City of Newton had the most difficulty. What was thought to be a simple process turned out to be complicated.

The Newton project attempted to collect data from purchasing records and to measure the amount and types of trash being generated by each department. Limitations in the computerized purchasing system prevented our ability to establish a baseline of items purchased across departments. Each municipal department had responsibility for ordering of supplies, and although purchases were documented, the detail of those purchases were not consistently recorded. In addition the computer software had additional limitations that prevented an assessment of totals of items purchased. Our systems prevented tracking of purchases.

Newton’s trash assessment included 1) asking custodians to record the number of bags of trash and recycling collected over a given period 2) gathering trash data from the City’s contracted waste hauler, and 3) asking employees to record the types and amounts of items in their respective trash cans.

Here again, specific and reliable data was difficult to collect. The custodial staff was at reduced levels for the entire term of the project. Waste hauler records did not include the level of detail to show how much trash was collected from each municipal building only the collections themselves. Therefore, the project had to rely on employees quantifying and qualifying the trash they disposed of. Approximately 50% of departments participated. We learned that the largest amount of items ending up in the trash were: napkins and paper towels, photo copy paper, plastics, food packaging, styrofoam, food scraps, envelopes, and post its. Most importantly, we learned that many items that were going into the trash could be recycled.

As outlined in the original Schedule of Deliverables, the project called for several such departmental waste assessments, but given the limitations, the subsequent phases were cancelled. However, as discussed later, as a result of the number of questions about recycling that repeatedly arose in the source reduction team meetings, we substituted a department-by-department recycling reeducation and source reduction campaign. This involved a visit to every department to explain directly to employees the importance of recycling and source reduction and to outline which items could be recycled.

Materials from Newton's Source Reduction Project

1. Waste Assessment Intake Forms: Office employees were provided with this form and a pair of rubber gloves and were asked to record the waste in their trash barrel. The data provided a picture of the types and amounts of materials being thrown away. Some of the results are displayed in Item 2.

WASTE ASSESSMENT INTAKE FORM	
Department _____	
Date _____	Staff _____
1) Waste Inventory	
<u>Item</u>	<u>Quantity</u>
Aluminum Cans	_____
Cardboard	_____
Food Packaging	_____
Food Scraps	_____
Glass	_____
Magazines	_____
Napkins/Paper Towels	_____
Newspapers	_____
Paper	_____
Photocopy	_____
Envelopes	_____
Lined Paper	_____
Letterhead	_____
Fax Paper	_____
Other Paper	_____
Pencils	_____
Pens	_____
Plastic Utensils	_____
Styrofoam Containers	_____
Styrofoam Cups	_____
Other (item and quantity)	_____
2) What supplies or items do you currently use during the course of your work day:	
a) that you could do without?	
b) that you could use less of?	
c) that could be substituted with a recycled or more durable alternative?	
3) What processes or procedures in your office could be streamlined?	
4) What suggestions do you have for ways that we can reduce waste and pollution?	

2. Waste Assessment Tabulation Sample: This is a tabulation of the results of the waste assessment from several departments.

Tabulation: Assessment

Item	Total	Health	IT	Law	Library	Planning	Purchas'g	School Admin
aluminum cans	6	1	2		2		1	
cardboard (mostly boxes)	23				6	1		16
candy boxes	0							
coffee cup	2				2			
food packaging	131	1	3	8	21	20		78
aluminum containers/wrap	22	3	1		4	8	6	
bags (paper)	8			2		3	2	1
bottle cap	1							1
candy/cookie wrapper	53		5	7	17	7		17
coffee cups	13		2			3		8
coffee cup sleeve	3					1		2
foil wrapper/dish	6			2				4
frozen food container	0							
gum wrapper	2							2
metal container	1			1				
milk container	1	1						
paper cup	18							18
paper cup cover	1		1					
paper plate	6	2		1			1	2
paper wrap	1			1				
pepper package	2	1	1					
plastic bags	33	3	2		9	3	1	15
plastic bottle	28		2	3	8		1	14
plastic cup	10	2						8
plastic jelly wrapper	2			1				1
plastic milk container	3			1		2		
plastic lids	12	3		1	2	2	1	3
plastic plate	30			1			1	28
plastic something	1							1
plastic tray	1	1						
plastic wrap	12	1	3		2	3		3
salad container	3	1				1		1
salad dressing container	1	1						
sandwich bag	3	1	2					
sandwich wrap	1	1						
soup container	1			1				
wax paper baggies	3					1	2	
yogurt containers	11		1		1	2		7
food scraps	62		1	3	12	18	4	24
donuts/bread	5		5			2		3
fruit	36	14	2	1		5		14
gum	4	2						2
tea bag	13	2	2			2	2	5
glass	3				1			2
magazines	31		1		4			26
marker	0							

Waste Assessment Tabulation Sample pg. 2

Item	Total	Health	IT	Law	Library	Planning	Purchas'g	School Admin
napkins/paper towels	422	60	6	12	21	71	8	244
newspapers	13			1			3	9
paper	0							
catalogues	3							3
envelopes	70	2	1	5		2		60
fax paper	27							27
forms with carbon	60				60			
junk mail	2			2				
letterhead	35		2	2		10		21
lined paper	20					4		16
paper plate with crumbs	1	1						
photocopy	375	2		37	1	19		316
p.o.s	3							3
other	156	1	5					150
adding machine tape	1							1
advertisements	17							17
brown bag	43			1				42
calendar page	1		1					
construction paper	3							3
index card	1				1			
label sheet	2		1		1			
manilla wrapping	1							1
mail	1					1		
match	1							1
match box	1							1
message slips	17							17
pen box	5				5			
plastic book jacket	2				2			
plastic-coated paper	0				many			
post-its	61		7	10	11	6		27
ribbon	1				1			
scrap	5				yes			5
silica gel package	1				1			
towel wrap	1	1						
videos	3				3			
pencils	0							
pens	17	3	2	2	8			2
plastic utensils	126	5	2	4	3	6	7	99
styrofoam containers	37		2	1	3	3	1	27
cups	44		4	2	7		6	25
plate	4		2				2	
tray	1						1	
other	0							
baggie	12			1		2	1	8
bubble mailer envelope	1							1
chop sticks	1					1		
coffee grounds	3	1						2
coffee stirrers	5			1			1	3
coffee tray	0							
dead plant leaves	3							3
kleenex box	0							

Waste Assessment Tabulation Sample pg. 3

Item		Health	IT	Law	Library	Planning	Purchas'g	School Admin
latex gloves	1							1
lollipop stick	1					1		
non-latex glove	1							1
paper bag	1	1						
paper clip	1							1
photos	3							3
plastic bags	2	2						
plastic bottles	0							
plastic strapping	4							4
popcorn bag	1							1
q-tips	4				4			
rubber bands	3				2			1
staples	18			14				4
sponges	1							1
straw	1							1
straw wrapper	0							
sugar packets	4							4
tape	2					1		1
tape container	1							1
video boxes	2				2			
wax bag	1		1					
tissues	48		5	7	5	3	3	25
Total	2318	120	72	136	232	214	55	1489

3. Waste Assessment Forms: The following two forms were used to collect data for Facilities and Public Works Garages.

a) Facilities

Waste Assessment Survey Sheet: Facilities		
A. Heating, Ventilation, and Air Conditioning		
1) Are HVAC systems on programmable thermostats?	Y	N
2) Were heating and/or air conditioning units installed more than ten years ago?	Y	N
3) Has it been more than two months since air filters were replaced?	Y	N
4) Has it been more than a year since HVAC system was professionally cleaned?	Y	N
5) Do buildings have zone controls for heating and cooling?	Y	N
6) Are windows caulked and doors weather-stripped?	Y	N
7) Are heating ducts and hot water pipes insulated?	Y	N
8) Do buildings have single-pane windows?	Y	N
B. Hot Water and Restroom		
1) Has it been more than 12 months since water heater was cleaned and tuned?	Y	N
2) Are hot water heater, tank, or pipes missing insulation?	Y	N
3) Was hot water heater installed prior to 1980?	Y	N
4) Are drips, water stains or steam visible any where?	Y	N
5) Are toilets low-flow?	Y	N
6) Has it been more than 6 months since you tested for leaks?	Y	N
7) Do you use low flow faucet aerators?	Y	N
C. Lighting		
1) If you use fluorescent lamps, are they "T-8s"? T-8s and electronic ballasts can cut electricity use by up to 40% while reducing flicker and improving color. Retrofit payback is 1-4 years.	Y	N
2) If you use T-12s, are they 40-watts? T-8s and T-12s are available in 34 and 32 watts which use 20% less energy.	Y	N
3) Are fluorescent fixtures covered with a grid reflector? Grid reflectors direct more light onto work areas and less light onto walls and ceilings.	Y	N
4) Do you use incandescent, "screw-in" bulbs? One compact fluorescent can save \$7 in electricity over its lifetime.	Y	N
5) Do you light parking lots or other outside areas? High density discharge lights are more energy efficient than standard fluorescent lights.	Y	N
6) Are exit signs lit with incandescent bulbs? Replace exit lights with LED or compact fluorescents. Payback is 1 to 5 years and compact fluorescents have longer life.	Y	N
7) Are light fixtures cleaned periodically? Dirt and dust can reduce light levels up to 25%	Y	N
8) Are occupancy/motion sensors used for lighting?	Y	N
Source: <u>P2 Toolkit</u> , Oregon Department of Environmental Quality		

b) Public Works Garages

Waste Assessment Survey Sheet: Public Works Garages

Area 1: Hazardous Waste Management Overview

A. Used Oil

Do You:

- | | | |
|--|---|---|
| 1. Store used oil in structurally sound containers? | Y | N |
| 2. Clearly label containers? | Y | N |
| 3. Keep containers closed except when oil is being added or removed? | Y | N |
| 4. Keep oil separated from other wastes? | Y | N |
| 5. Recycle used oil? | Y | N |
| 6. Have a used oil burner? | Y | N |
| 7. Accept used oil from residents? | Y | N |

B. Used Oil Filters

Do You:

- | | | |
|--|---|---|
| 1. Properly drain and dispose of used oil filters? | Y | N |
| 2. Recycle used oil filters with a scrap metal dealer? | Y | N |
| 3. Own a crusher? | Y | N |

C. Parts Washing & Absorbents

Do You:

- | | | |
|--|---|---|
| 1. Use cloth or other materials that are wringable and reusable? | Y | N |
| 2. Use a laundering service? | Y | N |
| 3. Have a parts washer? | Y | N |
| 4. How often do you change solvent? _____ | | |
| 5. How does solvent get disposed of? _____ | | |
| 6. How do soiled rags get disposed of? _____ | | |

Area 2: Hazardous Waste Containment and Storage

- | | | |
|---|---|---|
| 1. Is there a designated hazardous waste storage area? | Y | N |
| 2. Is storage area _____ inside _____ outside? | | |
| 2. Is storage area _____ covered _____ uncovered? | | |
| 3. Is there sufficient aisle space around containers? | Y | N |
| 4. Are containers labeled with start date, type of waste? | Y | N |
| 5. Are containers closed except when adding waste? | Y | N |
| 6. Are containers in good condition – free of dents, rust? | Y | N |
| 7. Are all wastes away from drains and impervious surfaces? | Y | N |

Area 3: Hazardous Waste Collection and Disposal

- | | | |
|---|--|--|
| 1. Who is the certified waste collector? _____ | | |
| 2. Where do you keep manifests for hazardous waste? _____ | | |
| 3. Do you self transport universal wastes? _____ | | |

Area 4: Painting Waste

- | | | |
|---|---|---|
| 1. Is painting done _____ inside _____ outside? | Y | N |
| 2. Do you have a spray booth? | Y | N |
| 3. Do you use paint filters? | Y | N |
| 4. Do you use a spray gun? | Y | N |
| 5. Are you using low VOC paint? | Y | N |
| 6. Are you using a paint thinner? | Y | N |

Waste Assessment Survey Sheet: Public Works Garages

Area 5: Solid/Universal Waste Recycling

Do You:

- | | | |
|---|---|---|
| 1. Safely store used lead-acid batteries? | Y | N |
| 2. Recycle spent lead-acid batteries? | Y | N |
| 3. Safely store mercury-containing fluorescent bulbs? | Y | N |
| 4. Recycle mercury-containing fluorescent bulbs? | Y | N |
| 5. Store used anti-freeze in structurally sound, marked containers? | Y | N |
| 6. Do you recycle anti-freeze? | Y | N |

Area 6: Solid/Other Waste Containment & Disposal

Do You:

- | | | |
|--|---|---|
| 1. Recycle empty aerosol cans? | Y | N |
| 2. Safely store and recycle used tires? | Y | N |
| 3. Have a certified technician remove freon from vehicles? | Y | N |

Area 7: Floor Drains and Storm Water Runoff

- | | | |
|---|---|---|
| 1. Are floor drains sealed? | Y | N |
| 2. Are floor drains connected to a registered holding tank? | Y | N |
| 3. Are floor drains connected to a municipal sewer system? | Y | N |
| 4. Do you maintain buffers between surface waters and upland areas? | Y | N |
| 5. Do you have any point discharges from your property? | Y | N |

Area 8: Vehicle Washing/Sand & Salt Spreaders

Do You:

- | | | |
|--|---|---|
| 1. Perform vehicle washing _____ inside _____ outside? | | |
| 2. What type of cleaning agent is used? _____ | | |
| 3. Keep salt/sand spreaders covered? | Y | N |
| 4. Keep salt/sand spreaders on an impervious surface? | Y | N |
| 5. Keep salt/sand spreaders lubricated for the summer? | Y | N |
| 6. Cap the hydraulics of salt/sand spreaders? | Y | N |

Area 9: Employee Safety

Do You:

- | | | |
|---|---|---|
| 1. Train employees to use equipment and chemicals? | Y | N |
| 2. Have an Environmental Health and Safety Plan? | Y | N |
| 3. Have a Spill Prevention Control Plan? | Y | N |
| 4. Keep Material Safety Data Sheets in an accessible place? | Y | N |
| 5. Have eyewash stations in maintenance bays? | Y | N |
| 6. Have fire extinguishers in maintenance bays? | Y | N |
| 7. Have spill kits nearby in case of emergency? | Y | N |

Area 10: Emergency Response

Do You:

- | | | |
|---|---|---|
| 1. Have an emergency response coordinator? | Y | N |
| 3. Keep the emergency contact information by the phone? | Y | N |
| 3. Have emergency numbers by the phones? | Y | N |

Source: New Hampshire Department of Environmental Services

For More Information:

- Measurement of Source Reduction, from Source Reduction NOW, Minnesota Office of Environmental Assistance at www.moea.state.mn.us
- Measuring the Success of Office Paper Reduction Efforts, California Integrated Waste Management Board, Publication #441-97-023 at www.ciwmb.ca.gov
- Profiting From Source Reduction: Measuring the Hidden Costs, Alameda County Source Reduction and Recycling Board at www.stopwaste.org
- Waste Reduction Policies and Procedures for State Agencies, California Integrated Waste Management Board at www.ciwmb.ca.gov
- Waste Prevention: Source Reduction Now, Minnesota Office of Environmental Assistance at www.moea.state.mn.us
- Commercial Waste Reduction Clearinghouse – Setting Up a Program, Oregon Department of Environmental Quality at www.deq.state.or/wmc/solwaste/recycling.html
- P2Toolkit, Oregon Department of Environmental Quality at www.deq.state.or/programs/p2/p2.htm
- New Hampshire Department of Environmental Services at www.des.state.nh.us/nhPPP/
- Waste Prevention: Source Reduction Now, Minnesota Office of Environmental Assistance at www.moea.state.mn.us
- “Solid Waste Assessments” from Establishing a Waste Reduction Program at Work, California Integrated Waste Management Board at www.ciwmb.ca.gov



VI. Publicize the Project

The City implemented a multi-faceted outreach and education campaign to disseminate information to employees, residents, and businesses. To keep the initiative in the public arena, outreach was an on-going effort throughout the course of the project. Specific activities are described below and samples of documents follow in the Materials from Newton Source Reduction Project Section.

1. Mayor's Press Conferences

Source reduction efforts were regularly described at the Mayor's weekly press conferences which were cable cast on the local access station.

2. Articles in Local Outlets

The City was fortunate to enlist the participation of the following organizations and press to publish articles in their newsletters.

<u>Organization</u>	<u>Title of Article</u>
• League of Women Voters/Newton	<i>Reduce, Reuse... Then Recycle</i>
• The Newton Connection:	<i>Source Reduction: What it Is and Why it's Important</i>
• City of Newton Employee Newsletter	<i>Source Reduction Team Formed</i>
• Newton Magazine	<i>It's recycling time again: Hold those paper cups</i>
• Newton-Needham Chamber of Commerce	<i>Source Reduction Is Your Business</i>
• Personal Property Tax Insert (sent to businesses)	<i>Source Reduction: It's Good for Business</i>
• Water Bill Insert (sent to businesses)	<i>Your Guide To Source Reduction</i>
• Green Decade Coalition/Newton	<i>Junk Your Junk Mail</i>
• The Boston Globe: Life at Home	<i>Use it and Toss it</i>

3. Pollution Prevention Corner

To the Green Decade Coalition/Newton's monthly Environmental Page in the local newspaper, a feature, "Pollution Prevention Corner", was added. The articles were edited from those written by the California Integrated Waste Management Board (CIWMB) which has produced a series for reproduction. The titles of original articles, (at www.ciwmb.ca.gov/wpw/coordinator/articles) are listed here. Several samples follow.

General waste prevention

1. [Is your garbage really garbage?](#)
2. [Meaning and importance of waste prevention](#)
3. [Overview of waste prevention techniques](#)
4. [Schools: laboratories of waste prevention](#)
5. [Facts of waste prevention versus recycling](#)
6. [The A,B,C's of waste prevention activism](#)
7. [Sustainability = consuming and purchasing less](#)
8. [It's landfull for California landfills](#)

Around the house

1. [Garage sales, rummage sales and thrift shops](#)
2. [Reuse ethic: repair, donate and buy used](#)
3. [Reusables: items like bags and boxes](#)
4. [Don't dump, donate](#)
5. [Junk mail](#)

Shopping and packaging

1. [Grocery shopping with the four Rs in mind](#)
2. [Reducing food waste by planning ahead](#)
3. [General packaging reduction techniques](#)
4. [Reduce packaging waste](#)

Composting and grasscycling

1. [Grasscycling offers simple alternative](#)
2. [Catch the composting craze](#)
3. [A recipe for good compost](#)
4. [Xeriscaping](#)
5. [Worm bins](#)
6. [Tire reuse can be fun](#)

At work

1. [Recharge printer toner cartridges](#)
2. [State offers free service for firms "trading trash"](#)
3. [Waste prevention at work](#)

Holidays

1. [Don't make the holidays "the haulidays"](#)
2. [Holiday "peanuts"](#)
3. [Toward a "greener" Christmas tree](#)

4. City of Newton Website

The City's website, at www.ci.newton.ma.us, was used extensively to disseminate information to the public. With the assistance of two high school students, a source reduction page for businesses was added to the website at www.ci.newton.ma.us/dpw/recycling.

5. Fact Sheets

To target various audiences and specific source reduction issues, several fact sheets (found in other sections of manual) were developed. The [Source Reduction Now](#) brochure was included as an insert in the water bill of all 29,000 city residents; the [What's in It For Business](#) information sheet was included in the personal property tax bill of all (approximately 3,000) businesses; and [What is Source Reduction](#) was distributed to residents who brought materials to any of the City's 6 household hazardous waste collection days which attracted more than 1,200 participants.

6. Mayor's Village Business Meetings

The Mayor held meetings in all 13 of the City's village centers to discuss issues with local businesses. A source reduction fact sheet was distributed to approximately 150 businesses at those meetings.

7. City Newsletter and City Intranet

Several articles were included in the quarterly employee newsletter. A variety of information, including the power point presentations from the source reduction team meetings, was posted on the City intranet.

8. Departmental Meetings

Meetings were held with Purchasing Staff, Fleet Maintenance Staff, School Principals, Municipal Departments, and Department Heads. Each session included a brief power point presentation followed by discussion on how to implement source reduction practices in the work setting. With the purchasing staff, the meeting focused on environmentally-preferable purchasing, and with the fleet maintenance employees, the focus was on finding ways to reduce toxic chemicals. All of the power point modules are found in the Training Modules Chapter.

9. Brochure to Newton-Needham Chamber of Commerce Expo

The [Source Reduction: It's Good for Business](#) brochure was available at the Chamber of Commerce BusinessExpo, a networking event that attracts several hundred businesses from the two communities.

10. Pollution Prevention Day

Although not required as part of the project, the program coordinator invited several local environmental organizations (Green Decade Coalition/Newton, Newton-Needham Chamber of Commerce, Newton Conservators, City of Newton Composting, Recycling and Household Hazardous Waste Committees, Charles River Watershed Association, Newton Sunergy Committee, Newton Energy Commission), to collaborate on an all-day environmental event. **Pollution Prevention Day** was organized to raise awareness and promote environmental action by providing information on a wide array of environmental issues.

The event was held in a large conference room of the main library and was organized into two sessions, one in mid-day and one in the evening. The event was set up to allow folks to come in through out the day to look at materials and talk with representatives of the environmental groups. Conference style seating was located in the front of the room in order to hear speakers and watch a film. The back of the room was set up with rows of tables providing display space for the environmental groups. Light refreshments were available.

"More Fun, Less Stuff", a 30-minute video produced by the Center for a New American Dream which focuses on the American consumer lifestyle and the alternatives and benefits of buying and using less was shown at both sessions. The Mayor, Superintendent of Schools, and President of the Board of Aldermen all "Took a Pledge" to prevent pollution. The evening gathering featured a performance by "Earth Tunes", an environmental band.

The employee-only portion of the day was held in a main corridor of City Hall for several hours. This provided ample opportunity for employees to wander through as the demands of their jobs allowed. A variety of displays were set up: samples of recycled products, fact sheets, a box in which employees were encouraged to turn in any standard cleaning products for a sample of an environmentally-safe product. A "Guess How Many Button Batteries are in the Jar" contest was held with a prize for the winner. All employees who showed up were given a recycled plastic mug to encourage elimination of the use of paper or styrofoam cups. Both events attained their goals of bringing folks out to learn and talk about environmental issues.

The Pollution Prevention day was a great success and it is worth implementing a similar activity. Many residents and employees attended and reported that they had learned a lot and were motivated.

Materials from Newton's Source Reduction Project

1. Mayor's Press Conferences: The two following items are the comments made by the Mayor to promote source reduction and reducing junk mail at his press conferences.

a) Source Reduction

"The City of Newton was recently awarded a grant from the Department of Environmental Protection to implement its new Source Reduction Plan. Newton is the only community in Massachusetts to have a certified plan and Newton is the only community in Massachusetts to receive this type of grant to implement this plan. We are proud to say that our plan is now being duplicated in other Massachusetts communities as well as in communities across the nation. This new grant allows Newton to contract with an individual to implement the Source Reduction Plan through June 2003. Newton was chosen for this grant due to its ability to successfully develop and sustain programs. This is a pilot program, which will be used by municipalities in Massachusetts and across the nation to develop their own source reduction programs.

Many years ago, the City of Newton, with good foresight and wisdom, developed a Solid Waste Master Plan which had several components including reducing waste at its source. Through the years, the components of the plan fell into place, as the markets changed. The only component missing until recently was reducing waste at its source.

Several years ago, through a newly created grant program, the City of Newton sought funding to develop a Source Reduction Plan and was the only community in Massachusetts to receive this assistance. Source reduction reduces waste disposal and handling costs because it avoids the costs of recycling, municipal composting, landfilling and combustion. It also conserves resources and reduces pollution. Because source reduction prevents the generation of waste in the first place, it becomes the preferred management option.

This plan was finalized in June 2001. But although this plan was in place, implementing it became an issue due to staffing and budgetary restraints. As a result, once again, the City of Newton sought and received a technical assistance grant from the Department of Environmental Protection to implement this plan in the form of a Source Reduction Coordinator.

This person will be responsible for establishing waste reduction goals for all City and School departments, provide training to departments, develop reuse options, establish an Environmentally Preferred Products program, ensure waste prevention policies are adopted into contracts specifications and procedures and expand this program to provide source reduction techniques to Newton residents and businesses. We hope to start this process shortly.

Between our source reduction and recycling programs, Newton will be able to reduce its waste stream by a significant percentage thereby saving tax dollars”.

b) "Junk Your Junk Mail" Campaign

“I am pleased to announce a new initiative I am sponsoring, called "Junk Your Junk Mail." Did you know:

- *One year's worth of bulk business mail takes 62 million trees and 25 billion gallons of water to produce?*
- *Paper accounts for 40% of waste being disposed of?*
- *It takes 17 trees to make a ton of paper?*
- *About 41 pounds of junk mail are sent to every adult each year?*
- *The average adult is on 50 mailing lists?*
- *Americans spend over \$275 million to dispose of junk mail every year?*

Not only are precious natural resources being used up, but think of all the time you spend sorting through unwanted mail, let alone the annoyance and frustration over poring through unsolicited information.

This educational campaign to help us all reduce junk mail, to avoid it, and to recycle the paper we do receive, is part of our source reduction project, funded by the Department of Environmental Protection. Source reduction intends to reduce waste at its source, thereby reducing disposal and recycling costs, as well as the costs associated with landfilling and combustion. Most important, it also conserves precious resources and reduces pollution. Because source reduction prevents the generation of waste in the first place, it becomes the preferred management option.

I am proud to say that Newton is a leader and innovator in environmental policy, climate action, and renewable energy initiatives. Now, Newton is a leader in source reduction, as well. Simply put, this is the right thing to do. And it makes sense for us to be taking these actions: it is good environmental policy and good economic policy. I have invited Linda Walden, Source Reduction Coordinator for the City of Newton, to share the steps you can take to reduce the volume of junk mail you receive”.

2. Pollution Prevention Corner: Here are a few of the articles which were adapted from the originals written by the California Integrated Waste Management Board.

Reuse Those Bags and Boxes

We are a disposable society that pays premium prices for brand new products just for the sake of convenience. Why clean a ceramic mug when you can throw a disposable cup away?

This throwaway culture needs to change its thinking if we wish to move to a more sustainable economy. We can all make a difference if we make the effort. Take personal responsibility for your own waste stream by paying more attention to what you buy, what you can reuse, and what you throw away.

Many everyday items can have more than one use. You can reuse paper and plastic bags -- as well as those twist ties. Instead of placing food items -- such as cheese or vegetables -- into a new plastic baggy, place them in a plastic bag previously used to package another food item.

You can also reuse brown paper shopping bags to ship an item instead of buying shipping paper. And don't buy those expensive shipping boxes - just cover up old addresses and reuse old boxes. If you are cleaning out paperwork, such as taxes, favorite newspaper clippings or bills, see if you can find a used box as a container before you go running off to purchase expensive specialty products at the store.

Don't limit yourself to paper products containers. Glass and plastic containers offer even more opportunities for reuse. A jar can be used as a cookie cutter or to store foods such as honey, maple syrup, grains and cereals.

There are ways to avoid having so many bags and boxes around the house in the first place. Take a string, mesh or canvas tote bag with you on your next shopping trip. When only one or two items are being purchased, consider whether you need a bag at all.

Attention Businesses: Don't Dump, Donate

The Hewlett Packard Co. has long been a leader in reducing waste from its computer manufacturing processes. However, following recent renovations, the firm still accumulated materials, such as used furniture and unused computer paper.

Rather than view these items as waste or even candidates for recycling, the environmentally conscientious company decided to donate the items to a local school. Not only did this divert potential waste from the landfill, it helped the school keep its costs down. Officials at one landfill report the disposal of new records, compact discs, campaign gear, clothing and other textiles. Landfill operators have seen truckloads of other shelf-ready merchandise -- including boots, laundry detergent and food -- dumped at landfills for the sole sake of clearing excess inventory.

Perhaps businesses do not realize that under Internal Revenue Code Section 170(e)(3), cost tax deductions are available to many donors of excess inventory. This allows "for profit" enterprises to donate excess inventory to charitable organizations and receive a deduction of up to twice the cost. Shipping and handling expenses are also deductible.

Businesses have donated over \$250 million worth of products in its first eight years of existence including Fortune 500 corporate giants such as Hewlett Packard and the Gillette Company; others are small, independent family businesses. Business owners and managers should consider donating excess inventory as an alternative to dumping it in landfills. It's a win-win situation for both consumers and businesses.

Educating Our Children

One of the most effective ways to reduce the mounds of trash generated is to educate kids about the value of waste prevention. Children discover that saving our environment can be fun and rewarding and can encourage their interest in taking care of the earth. Educating the next generation about waste prevention can make the job of reducing garbage in the waste stream far easier in the future.

One of the most preventable sources of waste is the classroom and Newton teachers are working to implement recycling programs. Simple practices can reduce the large volume of paper that contributes to the waste stream. For example, students can submit homework on the backside of used paper. Handouts should be printed on both sides, and teachers can use overhead projectors and blackboards to minimize copying. Through simple practices like these, students are learning about resource conservation, AND practice what they learn by participating in simple, effective, waste reduction programs.

Please take the time to educate your children about the importance of resource conservation – what you teach them and do at home will make a difference. And support waste prevention programs in your schools.

Waste Prevention Made Easy

We are slowly realizing that waste management is no longer an exercise in just finding new places to put trash. Even recycling is not enough to avert environmental and economic problems. **The overall amount of garbage produced in the first place has to shrink.... it's that simple.**

This realization is not necessarily easily translated into day-to-day actions. The good news is that more and more individuals and companies are committed to a program of waste prevention -- sometimes called source reduction -- to limit the amount of garbage that ends up going to expensive landfills.

Opportunities for preventing waste present themselves everyday. Here are some suggestions:

On the Home Front

Think twice before tossing. Can the item be reused for another purpose? Bags, boxes and envelopes can live many lives. They can store things -- leftovers, buttons, nails or thumbtacks. Do not reuse containers that originally held harmful chemicals since residues can persist. Never store anything potentially harmful in containers designed for food or beverages. Label containers and store them out of the reach of children and pets. If there is something you can no longer use, donate it to friends, relatives or charitable organizations. If all else fails, hold a garage sale.

Rent, borrow or share things you use infrequently like chain saws, rug cleaners or garden tillers. Repair and maintain items you already have, particularly large appliances and electronic equipment which take up a lot of space at the landfill.

While Shopping

Packaging is the leading source of waste. Shoppers should choose products with the least necessary wrapping. Consider large containers for products such as laundry soap or pet foods. Using concentrated products reduces waste, as does purchasing in bulk. Support store managers when they stock products with little or reduced packaging.

Another component is reducing waste toxicity. Many nontoxic alternatives can be found on store shelves. In addition, many communities are trying to reclaim items containing mercury similar to Newton's Mercury Recovery Program.

In Your Backyard

Using nontoxic alternatives yields fringe benefits. Planting marigolds to ward off certain pests not only limits the use of pesticides, but brightens up the day of anyone admiring your garden.

Creates less yard waste by "grasscycling" (leave grass clippings on the lawn), xeriscaping (plant slow-growing trees and shrubs that require less water and trimming), and mulching (spread clippings and leaves around plants) to keep down weeds and keep in moisture. Start a backyard compost pile or a worm bin to convert food waste into a high quality soil.

At Work

Using a reusable mug for coffee or tea could save pounds and pounds of paper, styrofoam and plastic waste.

Persuade your organization to choose reusable products, such as remanufactured printer cartridges. Work with suppliers to minimize the amount of packaging and to return shipping materials such as crates, cartons and pallets for reuse. Use high quality, long-lasting supplies and equipment that can be repaired easily. Be efficient: double-sided photocopying can cut paper costs by 10% to 40%. Reduce hazardous waste - find out if your graphics department uses inks, solvents or glue that are available with fewer toxic ingredients. Ask suppliers about water-based rather than oil-or solvent-based products.

What Can You Do? Make a pledge to start today...become a waste preventer.

An Ounce of Waste Prevention

An ounce of prevention is worth a pound of cure.

Remember these words muttered by Mom after you caught a bad cold usually doing something foolish -- like playing out in the rain without a warm jacket? How many health problems would have hurt a lot less if we had paid more attention to warning signs in the first place? This lesson applies to the environment, too. Preventing a problem is usually the cheapest way to go when it comes to protecting urban and rural environments. One of the best examples is taking responsibility for your own garbage.

Consider this: each American, on average, generates **four pounds of waste every day**. Nationwide, the total is more **200 million tons per year**, more than a quarter of which is merely packaging, the No. 1 waste problem in America. The recycling ethic has helped stem the flow of garbage into expensive landfills; but it is only a part of the solution and its role should diminish over time. How can that be? Attribute it to the beauty of prevention.

Waste prevention is commonly referred to as "source reduction." It's really a rather simple concept: **eliminate waste before it is created**. Less waste means less of a waste management problem, less of a need for recycling. While recycling is an effective way to manage waste materials once they have been generated, **waste prevention reduces the amount of material used in the first place**.

Waste prevention is the reduction in the amount or toxicity of trash generated. If you don't create waste, nobody has to pay to store it, collect it, or haul it to a landfill. Waste prevention saves precious natural resources by encouraging more efficient use of raw material. And it reduces pollution associated with extraction of raw materials from the earth, manufacturing excess products, and waste disposal. Waste prevention reduces the costs of composting, landfilling, or combustion in power plants or incinerators. Newton spends \$6 million each year for solid waste management.

The key to making waste prevention work is with us. We are all used to doing things a certain way and preventing waste means making lifestyle changes: purchasing more durable products, rejecting items with individually wrapped or single-serving containers; repairing and reusing items we might once have thrown away.

Socks and Plastic Containers

Why do we throw away plastic containers and not our socks? Both only need to be washed in order to be reused. A plastic food container is even more durable and long-lasting than the typical pair of socks, and can easily be used to store leftovers. But for some reason, we throw them away.

We have been sold on the concept of "convenience" which emphasizes consumption. We've been conditioned to believe that more, bigger, and newer is always better and more convenient. Making more informed choices about everyday activities, such as food shopping or lawn care, can make our modern lifestyle more sustainable.

Stop and think about it for a minute. Everything we buy is made from some material resource: plastic is made from oil, aluminum comes from bauxite ore, paper is made primarily from trees. All materials are valuable, whether we think of them as containers or products, disposable or reusable.

Consuming large amounts of water, electricity, gas, or any type of resource is unsustainable. Less consumption -- not more -- should be the overriding rule behind shopping. For example, choosing products that use less packaging or that use more environmentally friendly ingredients supports sustainability. Not buying products that use excessive packaging or that consume large amounts of natural resources will encourage companies to change their products.

Americans throw away six billion disposable pens every year, taking a big toll on our landfills: they use precious oil in manufacturing the plastic and consume energy for production. Don't forget to add the dollar out of pocket for the new pen. Is the expenditure of resources worth the convenience? And is it really less convenient to put our reusable plastic food containers in the dishwasher than to put our socks in the washing machine? **Your consumption carries an environmental price tag**. The closer to zero you can get the final tally, the more sustainable your shopping and lifestyle.

Waste Prevention versus Recycling

Practices such as recycling have helped reduce the amount of waste going to landfills.

But a more effective strategy to lessen the burden of garbage on local governments is waste prevention. Since 1973, twice as much waste has been diverted from landfills through waste prevention techniques, such as packaging changes and product design, as from recycling, according to the Global Futures Foundation, a nonprofit research group. Waste prevention creates jobs and reduces costs of doing business.

Waste prevention is the cornerstone of the strategy to reduce waste flowing to landfills that could reach capacity by the end of this decade. Everyone has heard the saying "**Reduce. Reuse. Recycle.**" Reducing and reusing are preferred because they require fewer resources. Reducing is the most basic solution to today's garbage glut: **less waste means less of a waste problem.** Reuse means getting several uses from a product. Extending the life of a product, whether it's an old sweat shirt or a piece of furniture reduces the rate of waste generation.

Recycling is actually just the beginning of the recovery process since it addresses material that has already entered the waste stream. It takes energy, resources and money to convert materials into a new product. After recycling, we must "close the loop." Products need to be made from these recovered materials and consumers then need to buy them (i.e. buy recycled). If there are no end uses for the recyclable materials, those materials could still end up in a landfill.

Both waste prevention and recycling are critical strategies that need to be embraced by all of us - citizens and businesses. Think about **what you can do** to prevent the amount of waste you recycle or throw away.

3. Pollution Prevention Day Materials

a) Press Release: This information was carried by the Newton community newspaper.

POLLUTION PREVENTION AWARENESS DAY: September 17, 2003

The City of Newton will celebrate National Pollution Prevention Week with a pollution prevention family day, titled "More Fun, Less Stuff", at the Newton Free Library on Wednesday, September 17th from 1:00 PM – 8:00 PM. "The day will offer an opportunity for all of us - citizens, families, businesses and environmental groups - to join forces for a common cause: to reduce pollution and enhance environmental quality," says Mayor David Cohen.

Environmental groups will have resource tables with information on a wide-variety of environmental issues. In addition, there will be two special 1-hour family programs offered at 1:00 PM and 7:00 PM, including:


- "More Fun, Less Stuff" -- a 30-minute video narrated by Danny Glover
- *Earthtunes*, musical entertainment
- Button–battery counting contest
- Exchange mercury thermometers for digital thermometers
- The Mayor's announcement of an Environmental Commission
- "Take the Pollution Prevention Pledge"

The short video is a must-see for family members of all ages. The simple but effective "Take the Pledge to Reduce, Reuse and Recycle" will be offered to all attendees. Newton has a high rate of recycling, but there is much to learn about other actions that we can take to make a real impact on protecting our environment.

Pollution Prevention Week originated in California in 1992 and gained widespread popularity in 1995 when it became a national effort. In 2000, President Clinton signed a letter of support, and Governors in sixteen states as well as scores of local officials issued official proclamations declaring support for the effort. Today however, we see an overall backsliding of efforts to reduce pollution and protect the environment. Hence, the City sees the importance in calling on all of us to take action.

b) Pollution Prevention Day Poster: This poster was distributed throughout the City.

Pollution Prevention Day - September 17, Wednesday

	<p>For Employees at City Hall 10:00 am – 2:00 pm, 1st Floor</p> <ul style="list-style-type: none">◆ Chemical-Free Office – replace office cleaning products with Super Citrus Concentrate, an environmentally-safe cleaner (one sample per department).◆ Mercury Thermometer Exchange & Used Printer Cartridge & Cell Phone Collection - get a digital thermometer when you bring in your mercury thermometer and bring used printer cartridges & cell phones for proper disposal.◆ Free Coffee Mug – made of recycled plastic
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Pollution Prevention Program - 1:00 pm and 7:00 pm

- Mayor creates Sustainable Newton Commission
- “More Fun, Less Stuff” 30-minute video narrated by Danny Glover
- “Earthtunes” musical entertainment (7:00 pm only)

Mercury Thermometer Exchange & Used Cartridge & Cell Phone Collection – 1:00 pm– 8:00 pm

- exchange mercury thermometers for a digital thermometer
- bring in used cartridges and cell phones for proper disposal

Information Tables – 1:00 pm – 8:00 pm

- Learn about: Composting, Energy Conservation, Household Hazardous Waste, Water Protection, Source Reduction, Recycling, Solar Energy, Pesticide Alternatives and much more!

Button Battery Contest Kick-Off – 1:00 pm – 8:00 pm

- How many batteries in the fish bowl? Prizes for best guess

For More Information:

- For Sample Fliers and Fact Sheets see Minnesota Office of Environmental Assistance at www.moea.state.ma.us
- “More Fun, Less Stuff” video from the Center for a New American Dream at www.newdream.org



VII. Specific Targets

The following were identified as focus areas due to the unique challenges of the target group or the importance of the issue. Each will be addressed in detail in this section.

A) Reducing Paper Waste

Since paper was the largest source of waste in municipal and school operations, and one that we felt we could significantly impact, we focused on reusing paper and reducing paper use.

B) Environmentally-Preferable Purchasing (EPP)

Since purchasing is a key area for control of the type of goods used, our goal was to direct departments to buy environmentally-friendly products.

C) Eliminating Toxic Products

Removing toxic products from the work place was seen as an important goal due to the potentially serious or insidious hazards to employee health.

D) The Business Community

Businesses interested in source reduction face issues that homeowners do not, such as the need to educate employees and setting up a program.

E) High Performance Buildings

The Source Reduction Team identified “green buildings” as one area with great opportunities to reduce waste and energy costs.

F) Recycling Re-education Campaign

As a result of the source reduction initiative, we found a need to systematically re-educate employees about the do's and don'ts of recycling in the workplace.

A. Reducing Paper Waste

Paper waste was a priority in Newton's waste prevention plan since paper is the main component in municipal trash generation providing many opportunities for reduction. Did you know that paper accounts for 50% of the waste stream...that it takes 17 trees to make a ton of paper...that it takes about 62 million trees and 25 billion gallons of water to produce one year's worth of this country's junk mail?

The specific actions enumerated in the City's Paper Reduction Goal were:

- Automatic double-sided copying.
- Reuse the back side of once-used paper.
- Circulate memos rather than duplicating copies for all staff.
- Use inter-office envelopes only when envelopes are needed.
- Reduce margins on written documents.
- Computerize letterhead.
- Purge mailing lists.
- Replace paper correspondence with email.
- Increase the use of bulletin boards instead of distributing information to employees.
- Use sticky fax notes instead of full cover sheets.
- Centralize filing systems.
- Convert paper forms to on-line formats.

Because of the number of actions involved, the paper reduction goal was approached systematically breaking down the tasks into four subgroups. Over the course of four months, the City's Chief Administrative Officer sent memos (a copy follows) to department heads enumerating the specific actions to be implemented in that given month. At the end of the month a brief report was to be submitted so that progress and implementation problems could be tracked.

The items posing the greatest challenges were:

- 1) automatic double-sided copying - some machines could not perform this function;
- 2) purging mailing lists - a labor intensive activity; some constituents did not have email
- 3) centralizing filing systems - time-consuming and needing a master plan for proper integration.

Junk Your Junk Mail Campaign

Due to the amount of junk mail that floods homes and business, the City launched a campaign to focus on reducing junk mail. The Mayor held a press conference announcing the campaign and inviting residents and businesses to participate. More importantly, he directed department heads to take specific action to reduce the amount of junk mail and unnecessary or duplicate publications or newspapers. A brochure was developed, information was posted on the City website, and a Commonwealth of Massachusetts "JUNK MAIL REDUCTION KIT" was distributed to several central locations such as the rotunda at City Hall and the central Public Library building. An edited version of the State's brochure was produced in house a copy of which follows.

As a result of the reduce junk mail initiative, a number of departments reduced multiple copies of items being received or cancelled the publication entirely:

- ✓ One department's 23 publications resulted in 41 pieces of mail after counting duplicates. After the campaign, 17 publications were cancelled altogether and number of copies in the remaining 6 were reduced to one per publication.
- ✓ A second department reduced the number of items coming in from 23 to 6, canceling 11 publications completely.

Materials from Newton's Source Reduction Project

1. Junk Mail Survey Memorandum: This was sent as a follow up from the Mayor to Department Heads.

Subject: Message from Mayor Cohen
Date sent: Fri, 19 Sep 2003 14:18:08 EST

I am writing to follow up on the junk mail survey and paper reduction plans. There is good news. 204 publications or copies of publications have been cancelled by various City Departments.

Since reducing junk mail was a public campaign that I announced a couple of months ago, I am planning on sharing the results of government efforts to reduce junk mail at one of my upcoming press conferences. If you did not complete this junk mail inventory, please do so as soon as possible. The junk mail reporting form is attached. Please send to Linda Walden.

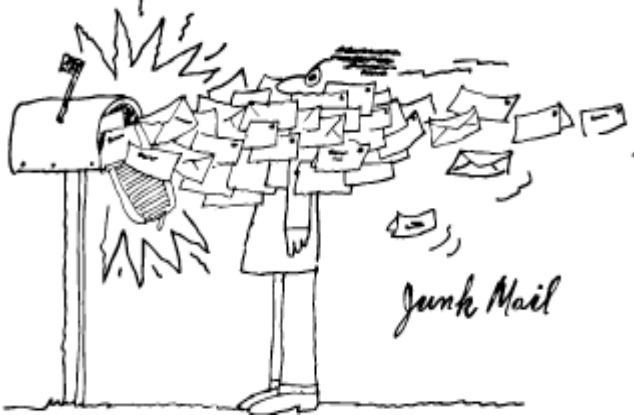
Also, I do want to review your departmental paper reduction plans. The source reduction team will be reviewing these at their next meeting, so please send them along promptly. Again, this can be sent to Linda Walden.

Lastly, in October, we will begin to implement the coordinated paper reduction effort that was discussed at a department heads meeting early this summer. Each month you will receive an email outlining the paper reduction activities your department should implement.

Thanks for your continued support of this initiative.

2. Junk Your JUNK MAIL! Brochure: This brochure, designed as a tri-fold for mailing, was targeted toward residents.

Junk Your JUNK



a pollution prevention project of the City of Newton, Massachusetts

City of Newton



David B. Cohen
Mayor

***Think of all the natural resources that are wasted, not to mention
the frustration and time you spend dealing with unwanted mail.***

DID YOU KNOW...?

- It takes about 62 million trees and 25 billion gallons of water to produce one year's worth of this country's bulk business mail?
- Paper accounts for 40 % of the waste stream?
- It takes 17 trees to make a ton of paper?
- Americans spend over \$275 million to dispose of junk mail every year?
- About 41 pounds of junk mail are sent to every adult each year?
- The average adult is on 50 mailing lists?

Junk Your JUNK MAIL!

When you subscribe to a publication, place a credit card order through the mail or internet, join an organization, or enter sweepstakes, chances are your name is added to a mailing list. There are companies in the business of selling these lists to other companies. To reduce junk mail, you need to reduce access to your name so that it will not be traded, rented, or sold to companies that send unwanted mail.

HOW TO GET RID OF IT!

STEP 1: Reduce Your Current Flow of Junk Mail

- ☐ Remove your name as soon as you receive unwanted mail. Call the toll-free number document if there is one.
- ☐ Tell your credit card company you do not want them to give your name to other companies.
- ☐ Call the following and ask to be removed from their mailing lists:
 - VAL PAK COUPONS: www.valpack.com
 - CREDIT CARD MAILING LISTS: 1-888-5OPT-OUT (888-567-8688)
 - THE POLK COMPANY: 1-800-464-7655
 - PUBLISHER'S CLEARINGHOUSE: 1-800-645-9242
- ☐ Contact the following to be removed from the mailing lists of companies that send unwanted catalogues, sweepstakes entries, coupons, etc.

ADVO Inc.
List Services
P.O. Box 4196
Hartford, CT 06147
www.advo.com
1- 888-241-6760

Haines and Company
Criss-Cross Directory
Attn: Director of Data Processing
8050 Freedom Ave, NW
North Canton, OH 44720
1-800-562-8262

Harte Hanks Direct Marketing
List Maintenance
6701 Bay Meadow Dr. Suite D
Glen Burnie, MD 21066
1-800-854-8409

Mail Preference Service
Direct Marketing Assn.
P.O. Box 9008
Farmingdale, NY 11735
www.dmaconsumers.org

Database America
Attn: Opt-Outs
5711 South 86th Circle
Omaha, NB 68127
complaints@infousa.com

STEP 2: Prevent Junk Mail Before It Starts

- ☐ When making a donation or a purchase, include a note instructing the organization or company not to lend, sell, or trade your name.
- ☐ Do not fill out contest entries: they are often used to develop mailing lists.
- ☐ Do not fill out unnecessary product warranty cards: these are often used to collect information for the purpose of targeting direct mail. Returning these cards is not required in most situations in order for the warranty to be active. If you want to return the card to learn about product recalls, provide only your name, address and the product serial number.

STEP 3: Recycle The Junk Mail You Do Receive

- ☐ Recycling helps to reduce the use of unrenewable resources by keeping materials in the product stream.
- ☐ Buying recycled products creates demand thus strengthening the market for recycled goods.
- ☐ Recycling reduces the amount of trash to manage. In 2002, Newton spent **\$6 million** on trash removal.
- ☐ For information on Newton's Recycling Program contact the Public Works Department at (617) 796-1000

Source: excerpted with permission from Reduce YOUR JUNK MAIL! by the Massachusetts Department of Environmental Protection.

3. Paper Reduction Memorandum and Goals and Timetables Report Form: This is one in a series of memos outlining a specific set of paper reduction steps to be taken in a given time period.

To: Department Heads
From: CAO
Date: September 29, 2003
Re: Implementation of Paper Reduction: October Actions

This is the first in a series of emails you will receive over the next four months outlining specific steps that should be implemented in order to achieve our paper reduction goal. Please take appropriate steps to insure that your staff are fully informed so that we are all participating in this important work. Our hope is that these actions will become an integrated part of everyday work life.

At the end of each month for each set of actions, you should submit a brief report to your department source reduction liaison and to Linda Walden. The report form is attached and can be found on the City's intranet site (<http://192.168.0.22>) under Source Reduction (Goals and Timetables Report Form). The outcomes from each department will be discussed at the monthly source reduction team meetings.

Actions to be implemented during the month of October:

- 1) **Copy** on both sides of paper.
- 2) **Use** the unused side of paper for drafts, notepads, etc.
- 3) **Circulate** memos rather than give copies to each staff.
- 4) **Eliminate** envelopes for inter-office mailing if possible; otherwise, reuse inter-office envelopes.

If you have any questions, please contact Linda at (x1005)...she will be happy to assist.

Goals and Timetables Report Form

Department _____ Date _____

Source Reduction Actions: please list

Was your department able to implement the actions? yes _____ no _____

If no, what issues or obstacles prevented implementation?

Other comments or suggestions:

4. Summary of Paper Reduction Actions: This memo summarizes municipal department efforts to reduce paper.

City of Newton, Massachusetts

Date: February 12, 2004

Re: Summary of Paper Reduction Actions Program

I wanted to give you a brief summary of the results of the paper reduction actions element of the source reduction project.

Overall Response Rate

The levels of response to this item are shown in the following table. In addition, I have included response rates for the Paper Reduction Plan (requested by the Mayor), the Junk Mail Campaign, and the Waste Assessment. As you can see, the overall response rate was less than stellar.

As you will recall, there was a set of specific actions that composed the Paper Reduction Goal in the full set of goals that was prepared by the source reduction team. Because there were so many, those actions were broken down into four groups for implementation. Over the course of four months, the CAO sent an email to department heads with instructions on implementation and reporting. This last date for reporting back on the final set of actions was February 2, 2004.

Action	# Dept Responses	% Dept Responses
Paper Reduction Actions:		
Goal 1	14	61%
Goal 2	10	43%
Goal 3	7	27%
Goal 4	3	10%
Paper Reduction Plan	12	52%
Junk Mail Campaign	9	39%
Waste Assessment	11	48%
Average Response	9	39%

Paper Reduction Action: Problems Identified

The following were the problem areas identified regarding the paper reduction actions:

- Need to implement actions at fire stations.
- Some copiers prevent automatic double-sided copying.
- Reducing use of envelopes is problematic as Fire Department union wants paychecks in envelopes.
- Not sure if staff are consistent in implementation of actions.
- Assessing results of actions is difficult.
- Using interoffice envelopes is problematic since they are expensive.
- Reducing font in documents is problematic as some customers (seniors) need large font.
- Sending mailings electronically is problematic since some mail recipients do not have email.
- Reducing margins is problematic as the courts require standard formatting in some documents.

For More Information:

- Best Practices Inventory for Municipal Source Reduction and Budget Savings Measures, Massachusetts Department of Environmental Protection at www.state.ma.us/dep
- “Reduce YOUR JUNK MAIL!, *Get rid of it!*”, Massachusetts Department of Environmental Protection at www.state.ma.us/dep/recycle/recycle/htm
- www.stopthejunkmail.com
- www.newdream.org/junkmail
- “Just Say No to Junk Mail” – www.p2pays.org/main/junk_mail_optout.asp
- Cutting Paper at www.lbl.gov/paper/index.html
- Creating a Paper Reduction Campaign, California Integrated Waste Management Board at www.p2pays.org/ref/03/02233/campaign2.htm
- Business Guide to Paper Reduction, ForestEthics at www.forestethics.org
- Office Paper Reduction Resources, California Integrated Waste Management Board at www.ciwmb.ca.gov

B. Environmentally Preferable Purchasing (EPP)

An important element in a comprehensive pollution prevention initiative is to purchase products or services that are environmentally-friendly. Environmentally preferable purchasing (EPP) is a conscientious effort to buy products and services that will have the least negative impact on human health and the environment.

The U.S. Environmental Protection Agency lists five guiding EPP principles:

- ✓ Include environmental considerations as part of the normal purchasing process
- ✓ Emphasize pollution prevention early in the purchasing process
- ✓ Examine multiple environmental attributes throughout a product's life cycle
- ✓ Compare environmental impacts when selecting products or services
- ✓ Collect accurate information about environmental performance

Through EPP, organizations can have a large impact. Green purchasing is becoming easier since there are more and more products on the market and there a number of organizations that have done research providing detailed information on specific products. Newton's efforts on the EPP front included:

- Developing a draft Environmentally-Preferable Purchasing policy.
- Encouraging green purchasing with employees who were responsible for purchasing.
- Reviewing bids and contracts to add or strengthen environmentally-friendly purchasing guidelines.

An organization should start by establishing a policy to promote environmentally-preferable purchasing. Key factors in making any purchasing decision are quality and value, and consumers should recognize that there are better and worse environmentally-friendly products available. In some cases, the EPP product may cost more than the traditional alternative, in which case, the organization will need to make a decision based on other factors. In Newton, if an EPP product is within 10% of the price of a traditional product, the department head may authorize its purchase. Some of the other factors which can be used to make purchasing decisions, as offered by the Minnesota Office of Environmental Assistance include:

Cost:	What is the purchase cost of each product?
Warranted Life:	What is the warranted life of the product?
Durability:	What is the estimated life of the product?
Repairability:	Is it better to have the product refilled, remanufactured or repaired?
Quantity per Year:	How many of the items will be needed for one year?
Cost per Year:	What is the cost of each product for one year?
Weight:	What is the disposal weight of the product and packaging?
Volume:	What is the disposal volume of the product and packaging?
Disposal Costs:	What are the costs for disposal of the product?
Toxicity:	What is the toxicity of the product in use and disposal.

Labor:	What is the comparative labor expense of using the product?
Other Costs:	Are there costs such as electricity, other fuels, water, additional materials?
Recyclability:	Are the product and container locally recyclable?
Recycled Content:	Does the product have post-consumer recycle content?

Materials from Newton's Source Reduction Project

1. Memo re: Out-Sourced Custodial Services: This memo summarizes how the City's out-sourced custodial services were incorporating non-hazardous cleaning products.

To: Purchasing Agent
From: Source Reduction Coordinator
Date: January 24, 2003
Re: Out-Sourced Custodial Services

Background

I have completed a review of information concerning out-sourced cleaning services that are provided to several public buildings with regard to use of environmentally-preferable products.

I contacted representatives of the following departments located outside city hall to determine how their facilities are cleaned. I asked for copies of contracts, job descriptions, and/or lists of products. I was specifically interested in the terms and conditions of contracts for services and the use of non-toxic chemicals and environmentally-friendly materials and products.

Findings

A. Fire Department

Firefighters execute all cleaning of the stations. The following list of products they used was submitted by the Storekeeper.

- 1) Webco Foaming Cleanser – scouring powder for sinks, tables, counters
- 2) Dynasol-Dynepine – bathroom disinfectant
- 3) Soilax: wall cleaner
- 4) Ecco Bowl and Porcelain cleaner
- 5) Nightowl 38 non-ammoniated floor stripper
- 6) Superglosen Heavy Duty #1 Yellow Carnauba floor wax
- 7) Liberty Metal Cleaner/Polish
- 8) Zep Formula 4358 Car and Truck Wash

These products should be evaluated for any hazards posed to humans or the environmental and, if any are identified, substitute products should be found. I have contacted the storekeeper, to see if he can provide any information on product content.

B. Health Department

From the proposal submitted by Capital Cleaning (August 2001) to the Health Commissioner:

- 1) There is no language specifying the use of environmentally-friendly products.
- 2) The contract does provide specificity on the cleaning products, tools, or procedures as listed below. I have underlined the pertinent language.
 - a) "Using chemically-treated dust mops in cleaning floors in office areas". What chemicals are being used?
 - b) "Using specially treated mops in lavatories". What are the mops treated with?
 - c) "Deodorizing and disinfecting cafeteria". The make up of these two products is not given.
 - d) "Using neutral soap solutions in cleaning toilet seats". While neutral soap is a step in the right direction, more clarification on the product would be helpful.

C. Jackson Homestead

The information I received from the Jackson Homestead had a specific list of cleaning procedures, but no information or guidelines on the products to be used.

D. Senior Center

The bid document for custodial services to the Senior Center (#03-16) included the following items related to environmentally-friendly products.

- 1) Specifies use of germicidal and disinfectant solutions for cleaning lavatories.
- 2) Specifies non-injurious low-alkaline detergent for floor cleaning.
- 3) Requires bidders to submit MSDS sheets.
- 4) States that cleaning agents are to be approved by the City.

The Senior Center provides paper products (paper towels, toilet tissue, trash can liners) which are all made of recycled materials.

3) Recommendations

I also reviewed the bid document (#03-04) for cleaning services to the Police Department. With regard to using environmentally-friendly products, this document only specified that "when possible, materials and cleaning agents shall be biodegradable and phosphate-free."

The City should take a much stronger position in advocating or requiring more environmentally-friendly products. The documents could be revised to include standardized language and cleaning product specifications. Appropriate sections of the documents should be rewritten to include clear and strong language of the City's preference for use of environmentally-friendly products and prohibition of those that pose harm to the health of humans or the environment.

2. BUY RECYCLED Fact Sheet

Fact Sheet: BUY RECYCLED

America Recycles Day Proclamation

By George W. Bush

We must preserve our natural heritage by serving as good stewards of our land. Recycling helps to serve this important function by conserving our natural resources as we reuse them where we can. Recycling safeguards our environment and helps keep America beautiful for present and future generations.



Why Buy Recycled?

Buying recycled allows us to get the most out of tree, every gallon of oil, every drop of water. But recycling materials is only the first step in the loop. As consumers, we need to close the loop and buy recycled-content products. Buying recycled is good for the economy and the environment by...

- ... **reducing** use of non-renewable resources
- ... **protecting** forests, water, wildlife habitat and the air we breath
- ... **creating** markets for recycled goods
- ... **saving** garbage collection and hauling costs
- ... **reducing** the amount of trash going into the waste stream
- ... **creating** jobs

Did You Know...

Recycling one aluminum can saves enough energy to run a television set for three hours?

Recycling one ton of glass saves 9 gallons of fuel oil?

Recycling newsprint, glass and metal can reduce carbon dioxide emissions by 850 pounds per year?

The Recycling Industry

- Recycling in the Northeast is a **\$44 billion a year industry** with 14,000 businesses that employ 206,000 people earning \$6.8 million in wages
- In Massachusetts there are 800 recycling related manufacturing jobs employing **12,000 residents**
- In 1999, Massachusetts residents and businesses generated **13 million tons of solid waste**, approximately 31% of which was recycled
- Nationally, the recycling industry has more than 56,000 facilities with **1.1 million jobs**, \$236 billion in gross, annual sales and \$37 billion in annual payroll
- Recycling 15 tons of waste into a new product creates **9 jobs**
- Recycling manufacturers use close to **4 million tons** of recovered glass, metals, plastics, carpet, food, wood, electronics to make new products

REDUCE then REUSE then RECYCLE

Today's purchases affect tomorrow's environment.

For More Information:

- Green Seals *Choose GREEN* Report at www.greenseal.org
- Commonwealth of Massachusetts Environmentally Preferable Products Procurement Program at www.state.ma.us/osd/enviro/products.htm
- U. S. Environmental Protection Agency Environmentally Preferable Purchasing: EPA's Five Guiding EPP Principles at www.epa.gov/oppt/epp/gentt/textver/topic7.html
- Resourceful Purchasing: A Hands-on Buyers Manual, Alameda County Source Reduction and Recycling Board at www.stopwaste.org
- Your Guide to: EPA's Purchasing Tool Suite, U. S. Environmental Protection Agency at www.epa.gov/oppt/epp/toolsuite.htm
- State and Local Government Pioneers: How State and Local Governments are Implementing Environmentally Preferable Purchasing Practices, U.S. Environmental Protection Agency at www.epa.gov/oppt/epp/documents/doccase.htm
- U. S. Environmental Protection Agency Environmentally Preferable Purchasing: Environmentally Preferable Products Final Guidance Brochure
- "Purchasing Guidelines for Source Reduction" from *Source Reduction Now*, Minnesota Office of Environmental Assistance at www.moea.mn.state.us
- In-House Waste Reduction and Recycled-Content Product Procurement Policy; Buy Recycled; and Environmentally Preferable Purchasing: Sample Waste Reduction Policies and Action Items, California Integrated Waste Management Board's at www.ciwmb.ca.gov

C. Eliminating Toxic Products

In our home and work lives, we use many products that contain harmful chemicals which pollute water, cause health problems to humans, and cause genetic mutations in some species, among other harmful effects. One of the goals of source reduction is to eliminate or reduce the use of harmful chemical agents and to find less or non-harmful alternatives to those products. The City of Newton focused on several areas: the cleaning products which were being utilized by custodial staff, cleaning products that were brought in to the workplace by employees, products being used by the fleet maintenance division for cleaning of vehicle parts, and Household Hazardous Waste Collection Days.

1. Cleaning Products in City Offices and Schools

Informational materials were made available to employees. Removing products with harmful chemicals was a specific target during the Pollution Prevention Day event that was organized as an educational outreach tool for municipal employees. During that event, employees were offered an opportunity to turn in harmful products in exchange for a sample of a safe cleaning product which was donated by Supreme Industrial Products which had been awarded a state contract for its cleaner. The school department had previously notified teachers to remove cleaning products that they had brought into their classrooms and provided them with a substitute, more environmentally-friendly cleaner.

2. Fleet Maintenance Operation

The City's fleet maintenance operation services all 500 municipal vehicles - automobiles, public works equipment, and police cars. After meeting with the Superintendent of Equipment and touring the facility, several areas were identified for improvement. The most significant from cost savings and reducing toxic waste material perspective was to install a vehicle parts washer was designed to reduce the amount of sludge by-product that would then need to be disposed of. The reduction in the sludge achieved through the use of this parts washer is significant: the old parts washer produced a 120-pound barrel of sludge/mineral spirit solvent every six weeks. The new washer generates approximately a one pound can every 3 months.

“Profit Through Prevention, Best Environmental Practices for Fleet Maintenance”, a film produced by the U. S. EPA, offers a number of suggestions on pollution prevention, was shown to the fleet maintenance staff of about 12 individuals. After discussion, the group agreed to eliminate as many aerosol cans as possible by switching to reusable spray containers. The City is in the process of a more thorough review of this area and is developing an Environmental Management System.

3. Residents and Businesses

The message of reducing harmful chemicals used in the household or in the business setting was delivered through a variety of electronic and written materials. The general Source Reduction brochure, which was distributed to all households and businesses in the city, included a section on harmful products. Information pieces were placed on the City website and articles were published in the local community newspaper.

4. Household Hazardous Waste

The City of Newton received a grant from the Department of Environmental Protection to develop a permanent Household Hazardous Waste (HHW) facility. Located at the City’s Resource Recovery Center, the facility collected waste from 1200 households during six collection days in 2003. In 2004, the facility expanded hours and opened two days per week. Residents are given a HHW brochure as well as alternative product information. It is expected to expand in the coming year.

Materials from Newton's Source Reduction Project

Household Hazardous Waste Brochure: This brochure was designed with residents in mind.

City of Newton, Massachusetts Fact Sheet: Household Hazardous Waste

Exposure to Chemicals

According to the U.S. Environmental Protection Agency, only a handful of more than 75,000 registered chemicals have been tested for human health concerns. Some toxins show immediate effects and reactions to others take longer. Because their bodies are still developing, children are especially vulnerable. We all contribute to the contamination of our environment when we use common household products that are toxic. It is estimated that 25% of toxic waste originates in the home. Handling and disposing of household hazardous waste is expensive and dangerous. The only long-term solution is to reduce the usage of hazardous products

Steps You Can Take

There are many actions we can take to keep our homes, our children, pets, and ourselves safe.

1. Purchases

- Buy products that are toxic free. There are growing numbers of alternatives available.
- Reduce exposure: use only the amount you need and use all before disposing of the container.
- Buy products made from biodegradable, plant-based materials.
- Do not use aerosol containers which have volatile chemicals
- Buy unbleached paper products

2. Personal Hygiene

- Do not use antibacterial soaps which contribute to the development of drug-resistant bacteria.
- Exchange mercury thermometers at the Department of Public Works for a digital thermometer.
- Make sure that eye drops, nasal sprays, and contact lens solutions are free of thimerosal or other mercury preservatives.

3. Food

- Buy organic produce which has less pesticide residue.
- Rinse all produce to remove any residues from pesticides or fertilizer
- Do not use plastic in the microwave since plastics can become absorbed by the food.

4. Alternative Cleaners

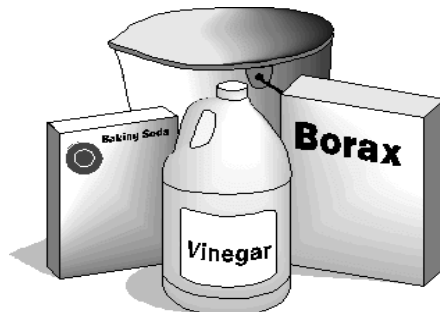
- Keep a floor mat at the door to prevent harmful products from entering your home.
- Clean floors and rugs often to remove harmful products.
- Use a HEPA filter to keep the dust in the vacuum cleaner.
- Use products that are free of chlorine bleach and low in phosphates.
- Use non-toxic pest control products.
- Avoid using bleach when washing clothes.
- Buy clothes that do not need to be dry cleaned
- Use building materials that are free of Volatile Organic Compounds.
- Buy carpeting that meets minimum standards for indoor air quality.

5. Your Yard

- Keep grass a bit longer for deeper root growth.
- Ask lawn service to use less toxic alternatives
- Use only as much fertilizer as needed and use a no phosphorous product.
- Remove weeds by pulling and digging instead of using herbicides.
- Use mulch around trees and bushes to keep plants moist and use less water.
- Leave grass cuttings on the lawn.

Sources: Minnesota Office of Environmental Affairs; U.S. EPA;
Illinois Department of Natural Resources

Environmentally Friendly Household Products



Air Freshener	Add spices to boiling water and simmer. Set bowl of Potpourri in a sunny window or on a radiator.
All Purpose Cleaner	For windows and mirrors, use 1 part vinegar, 4 parts warm water in a spray bottle. For toilet bowls and fixtures, dissolve 3 tablespoons baking soda in 1 quart of warm water.
Anti-bacterial Soap	Use plain soap and water.
Bleaches	Use dry bleach such as Borax, Miracle White, or washing Soda.
Drain Openers	Use a plunger or metal snake; pour a handful of baking soda and ½ cup of white vinegar down the drain.
Floor Cleaning & Waxing	Mop with 1 cup white vinegar mixed with 2 gallons of water to remove dull greasy film. Polish with club soda.
Furniture and Floor	<u>Furniture</u> : do not use aerosol sprays. Mix 1 part lemon juice in two parts olive or mineral oil or use Murphy's Oil Soap or Old Craftsmen's brand lemon oil and beeswax polish. <u>Floors</u> : mix equal parts oil and vinegar, apply in thin coat and rub in well.
Indoor Insects	<u>Fleas</u> : feed animals brewer's yeast. Spread fennel, rosemary and eucalyptus seeds and leaves around area where animal sleeps. <u>Ants</u> : place a line of cinnamon, cream of tartar, red chili, cayenne pepper, paprika, bone meal, or charcoal dust where ants enter the house.
Laundry Detergent	Use the mildest product suitable.
Mothballs	Use cedar chips or aromatic herbs such as lavender.
Oven Cleaner	Mix 3 tablespoons of baking soda with 1 cup of warm water.
Scouring	Baking soda, Bon Ami, or Clorox Soft Scrub
Silver Polish	Soak in 1 quart warm water with 1 tablespoon baking soda, 1 tablespoon salt, and piece of aluminum foil. Boil for 3 minutes, scrub with old toothbrush, if necessary.

For More Information:

- www.sustainableproduction.org
- Pesticide Issues & Topics, Northwest Coalition for Alternatives to Pesticides at www.pesticide.org
- Guide Sheets, University of Missouri Outreach & Extension at <http://outreach.missouri.edu/owm/hhr.htm>
- “A Manual for Sponsoring a Collection Event”, Pennsylvania Department of Environmental Protection at www.dep.state.pa.us/dep/deputate/airwaste/wm/HHW
- Pittstops Manual: Best Practices for Automobile Service Facilities, New Hampshire Department of Environmental Services at ww.des.state.nh.us
- Profit Through Prevention: Best Environmental Practices for Fleet Maintenance, U.S. E.P.A. at www.epa.gov

D. The Business Community

Businesses are finding that source reduction is not only good for the environment, but good for business.

- A power company in Minnesota saves \$1,600 per month by switching to reusable cups.
- A New York City public agency saves \$1,250 a year by using two-way envelopes.
- General Motors, North America increased recycling by 64% (50,000-80,000 tons) and decreased waste management costs by 15%-30%.
- Pizzeria Uno in New York saves \$1,120 a year by using coasters instead of cocktail napkins.

One component of Newton's source reduction program was to reach local businesses. Because the City does not collect commercial trash, there was no way to determine the amount of waste generated by local businesses. The Massachusetts Department of Environmental Protection reports that between 1999-2000, the solid waste generated by state's commercial sector increased by 14% from 4.46 million tons to 4.86 million tons.

Because Newton's approximately 3,000 businesses are scattered throughout 13 village centers, options for outreach were limited. A door-to-door campaign was started and would have been an excellent way to reach out since it affords the opportunity to have a one-on-one conversation. However, due to limited manpower, this was discontinued. The activities in the commercial outreach campaign included:

- An article in the Newton-Needham Chamber of Commerce newsletter to over 600 members.
- Distributing a “Source Reduction: It's Good for Business” brochure through the property tax bill of all commercial establishments and the Chamber of Commerce Expo Day, a networking and information event, and; to nearly 150 businesses attending the Mayor's Village Meetings.
- Developing a web-based Source Reduction Guide for Businesses on the City of Newton web site at www.ci.newton.ma.us.

For More Information:

- RE-think Your Bottom Line, Alameda County Source Reduction and Recycling Board at www.stopwaste.org
- Reduce, Reuse, Recycle – It's Good Business: A Guide for California Businesses, California Integrated Waste Management Board at www.ciwmb.ca.gov
- Waste Reduction Resources for Massachusetts Businesses, Massachusetts Department of Environmental Protection at www.state.ma.us/dep/recycle/business.htm
- Massachusetts Buy Recycle Business Alliance at www.mbra.org
- WasteCap at www.wastecap.org
- Recycling Services Directory and Markets Guide for Massachusetts, Massachusetts Department of Environmental Protection at www.ma.gov/dep/recycle/business.htm
- “Commercial Waste Reduction Clearinghouse Setting Up a Program”, Oregon Department of Environmental Quality at www.deq.state.or.us/wm/xwcr.html
- Business Guide to Paper Reduction, ForestEthics at www.forestethics.org
- Office Paper Reduction Resources, California Integrated Waste Management Board at www.ciwmb.ca.gov

E. High Performance Buildings (HPB)

One of the five areas identified as important in source reduction was “Green Buildings” defined as creating safer and healthier public buildings and workplaces, maximizing the use of energy and other resources, and reducing environmental impacts. Included in this category was: eliminating harmful chemicals, looking at the energy efficiency of office equipment, and finding ways to reduce energy and water consumption.

Since the City’s Public Building Department had responsibility for municipal and school buildings, the source reduction team did not devote time to developing activities under this particular goal. Rather, the consultant worked with that department to find ways to support and promote their existing “green building” activities, to share information, and to encourage further exploration of this area for existing and future new buildings.

One of the activities, was to eliminate harmful or toxic chemicals. Meetings with custodians in municipal and school buildings showed that they had switched to environmentally-friendly cleaning agents. They were encouraged to take additional steps, such as purchasing recycled items whenever possible. Teachers were instructed to eliminate harmful cleaning products in their classrooms and were provided with an alternative cleaner. City employees were prompted to do the same and were offered a sample of an environmentally-safe cleaner.

Some of the City’s other initiatives in this area include:

- Established an Energy Commission composed of residents, city employees, and professionals to develop an Energy Action Plan. The source reduction project manager reviewed the draft.
- Incorporated HPB criteria into the renovations at one high school (natural light, placing lighting and heating systems on timers, using rainwater for irrigation) and adopted HPB principles for the construction a second high school.
- Created a Sunergy Task Force to promote “green” energy/solar technologies through grant awards.
- Established a Sustainable Newton Committee to advise the Mayor on sustainability policies and actions.

For More Information:

- Green Building Basics, Green Building Alliance at www.gbapgh.org/GBBasics_main.asp
- Sustainable Building Tool Kit, California Integrated Waste Management Board at www.ciwmb.ca.gov
- Introduction to Green Building, Green Roundtable at www.greenroundtable.org
- HCollaborative for High Performance Schools at www.chps.net
- GreenerBuildings at www.usgbc.org

F. Recycling Re-Education

In several source reduction team meetings, questions were repeatedly raised about recycling. Many employees simply did not understand the how-to’s of recycling at City Hall; what was allowed and what was not. There had not been an active recycling education effort with city departments in nearly 14 years and we responded by incorporating recycling as one of the elements of our source reduction initiative. Specifically, we launched an aggressive recycling re-education campaign that would reach out to every department.

The campaign included a scheduled visit by the Director of Environmental Affairs, the Solid Waste Manager, and the Source Reduction and Recycling Coordinators to each department. Department heads were asked to schedule the visit at a time when all or the majority of their staff could be available. During the 15-20 minute visit, we:

- discussed the difference between source reduction and recycling
- identified the impact and financial savings to the City as a result of recycling
- identified specific items that were recyclable and those that were not
- provided a flyer listing recyclable paper products that could be taped to recycling waste cans
- provided a list of the five source reduction goals for posting in each office
- gave each employee that attended a recycled, reusable plastic cup with the City’s recycling logo

Nearly all departments, were visited within a two-month period and, with one exception, we were very well received. Employees seemed very interested to learn how they could help and participate.

Materials from Newton's Source Reduction Project

1. Recycling Re-education Campaign: Fliers Distributed to All Departments: For purposes of saving space in this manual, the fliers are reduced.

a)

RECYCLE ALL PAPER ITEMS

Accounting ledgers	Junk mail
Binder paper	Legal pads
Books (soft, hardcover)	Magazines
Brochures/pamphlets	Manuals/glued bindings
Cardboard (breakdown)	ilk/juice cartons (rinsed)
Colored office paper	Newspapers
Computer print-out	Phone books
Copy/typing paper	Receipts
Copy paper wrapper	Scratch pads
Envelopes	Spiral notebooks w/binder
Fax sheets	Stationery
File folders	Tabulating and time cards
Flyers/posters	White office paper
Greeting cards	

**ANYTHING THAT LOOKS LIKE PAPER IS PAPER – RECYCLE IT
ANY QUESTIONS, CALL DPW – CUSTOMER SERVICE, X1000**

b)

ITEMS TO RECYCLE IN THIS BIN

ALL PAPER PRODUCTS
BOOKS, MANUALS
BUILDING/ENGINEERING PLANS
CARDBOARD (please breakdown)
CLEAN CARDBOARD BOXES
ENVELOPES
FILE FOLDERS
JUNK MAIL
MAGAZINES
MANUALS W/GLUED BINDINGS
MILK/JUICE CARTONS (please rinse)
NEWSPAPERS
PHONE BOOKS
SPIRAL BOUND PRODUCTS

c)

TRASH ONLY: Non-Recyclable Items
NON-RECYCLABLE ITEMS

Bubble Wrap/Peanuts
Candy Wrappers (no foil)
Foam Packaging, Styrofoam
Foam Food Containers, Cups, Plates, etc.
Food Scraps
Plastic Bags
Plastic Utensils, Plates, Cups
Sheet Plastic
Tape Tissue, Napkins, Paper Towels (used) Used Pens, Pencils

ANY QUESTIONS, CALL DPW – CUSTOMER SERVICE , X1000

d)

GLASS, PLASTICS, METALS
(COMINGLED)

Aluminum Foil and Trays
Aluminum and Steel Cans
Glass Bottles, Jars, Containers
Juice Boxes with Foil
Plastics 1-7

All items must be free of liquid and food waste and can be placed in either a green bin or a toter in your office or at your building

DO NOT PUT PLASTIC BAGS OR STYROFOAM
EVEN IF IT HAS A RECYCLING SYMBOL

ANY QUESTIONS, CALL DPW - CUSTOMER SERVICE, x1000

For More Information:

- National Recycling Coalition at www.nrc-recycle.org
- Northeast Recycling Coalition at www.nerc.org
- Earth 911 at www.earth911.org
- Recycle City at www.epa.gov/recyclecity/
- Resource Recycling at www.resource-recycling.com



VIII. Accomplishments and Lessons Learned

A) ACCOMPLISHMENTS

Did we accomplish everything we set out to do and in the manner we planned? No. Did we find other issues we never expected? Yes. Nothing is perfect! We are proud of what we have accomplished: a solid program upon which we will continue to build. The following highlights our achievements.

1. Education and Awareness

- **Created** significant awareness of source reduction and established on-going activities.
- **Distributed** Source Reduction Brochure to all businesses and residents.
- **Participated** as member of School Department Environmental Management Team.
- **Distributed** recycled plastic mug to employees to substitute for styrofoam cups – 10-cent discount from cafeteria for using recycled mug.
- **Designed** source reduction web site links for businesses and residents.
- **Planned** and implemented Pollution Prevention Day
- **Constructed** Permanent Household Hazardous Waste Collection Facility.
- **Placed** contract bids on-line.
- **Reshaped** Newton's recycling program.
- **Developed** a new Public Works website to accommodate new programs.
- **Created** a "swap" website for residents to trade household items.

2. Organizational Structure and Process

- **Achieved** consistent high team meeting attendance.
- **Improved** environmentally-preferable purchasing especially for custodial supplies.
- **Adopted** Integrated Pest Management as preferred method of pest control.
- **Created** Sustainable Newton Committee to advise Mayor sustainable policies and issues.
- **Established** Division of Environmental Affairs in the Public Works Department to oversee solid waste issues, complaints, and environmental problems and to integrate with other departments.
- **Developed** an Environmental Management System.

3. Concrete Reduction Actions

- **Completed** one set of waste assessment results.
- **Received** Paper Reduction Plans by each department.
- **Reduced** trash at City Hall by more than 10%.
- **Reduced** 8.5" x 11" white paper at City Hall by more than 8% and reduced dumpster size.
- **Reduced** magazines and journals by 204 publications.
- **Installed** new parts washer at the garage reducing hazardous waste by 99%.
- **Decreased** aerosol cans in vehicle maintenance by substituting reusable spray bottles.
- **Reduced** amount of junk mail received in municipal departments.
- **Converted** from hard copies of agendas/materials to electronic format at Mayor's Department Heads meetings and Public Works Planning meetings.
- **Reduced** the number of hard copies sent by the Board of Alderman to each municipal department.
- **Increased** on-line searches for aldermanic business instead of use of paper copies.
- **Consolidated** five Engineering Department permit forms into one form.
- **Reduced** the number of project plants submitted by petitioners from five to one.
- **Consolidated** purchasing for all Public Works Department divisions.
- **Field-testing** of re-treaded tires by Fleet maintenance.
- **Defaulted** to double-sided copying when technology allowed.
- **Converted** one copier for exclusive use of printing drafts on once-used paper (Law Dept).

- **Increased** use of scrap paper instead of new paper and now make pads of paper from scrap which are distributed to all departments.
- **Started** a “Trash Budd” based on a pilot in six departments
- **Reduced** hard-copy memos to emails.
- **Beginning** a “Recycle More Paper” drive to increase paper recycling to 60%.
- **Experimenting** with an electric car for the City fleet.
- **Reducing** street light fixtures from 100-175 watt bulbs to 55-65 watt bulbs.
- **Developed** an educational alternative brochure for Household Hazardous Waste.
- **Received** grants from the Massachusetts Department of Environmental Protection to 1) sponsor a “Healthy Lawn and Landscape Workshop”, 2) develop an “Anti-Idling Campaign”, and 3) to underwrite the cost of Rain Collection Barrels to homeowners.
- **Began** using a salting alternative (environmentally-friendly) to for slippery road conditions.
- **Researching** food composting options in Newton Public Schools.
- Expanding scrap metal collections.

B) LESSONS LEARNED

1. Management Buy-in

There is a constant need to reinforce source reduction at all levels within your organization. Source reduction will probably not be a top priority on managers demanding work programs. It will be useful to meet with top and middle managers throughout the project to keep them informed and get their input. The need to emphasize constant communication between managers and staff is important

2. Source Reduction Team Buy-in

Make sure people on your team want to be there since interested members will be more likely ensure that source reduction is going on in their departments. Otherwise, there may be poor communication between the team members and department staff. Getting participation can be very difficult, especially in times of budget cuts and staff reductions. When members don't come to meetings, be sure to follow up as to what they are doing in their departments. More one-on-one meetings with team members are recommended.

3. Employee Buy-in

Many people still don't know or care about recycling, let alone source reduction, and you will need to make a direct correlation that recycling is good for them. You may want to consider an incentive program in which a department receives back a portion of savings they have achieved through source reduction.

4. Formal Team

After the completion of your Source Reduction Program, keep a formal team going. We determined that the original team was too large and decided to continue with a smaller team approach by grouping similar departments together, each grouping having a representative on the new team.

5. Don't Reinvent the Wheel

Start by doing research – a wealth of materials is available on the internet. Contact other communities or companies with source reduction programs. You will be amazed at the amount of information that exists and will find that people are happy to share their information.

6. Be Flexible and Prepare for the Unexpected

Be willing to change and make adjustments. Situations change and people come and go. You may start with an initial set of circumstances or plan and may need to shift gears to accommodate the unexpected. Although Newton has a top-notch recycling program, we discovered that many employees did not know what could or could not be recycled. As a result, we launched a recycling re-education initiative during the source reduction effort.

7. Keep an Open Mind

Although you may have one set of ideas in mind, as you meet with various municipal departments, businesses, or residents, new ideas will arise. Your way of thinking about source reduction will be challenged...guaranteed!

8. Record Keeping

Records that you expect to be available may not exist, they may be difficult to access, or incomplete. Because Newton's purchasing records were difficult to interpret and the current accounting system had limited capability, we were unable to develop baselines against which to compare future purchases. This is likely to be problematic for other communities.

9. One Step at a Time

Don't look for big successes. It will take time for source reduction to catch on. People are creatures of habit. We have adopted a new attitude in Newton: **Pound by Pound, Inch by Inch.**

Materials from Newton's Source Reduction Program

Source Reduction Evaluation Results: This summarizes the evaluation by the Source Reduction Team members of the project. Specific comments made by members are bulleted in each item.

Source Reduction Project Evaluation

1. Were the team training sessions useful? If no, why? yes 11 no 0
 - learned a lot about source reduction and its role with and separate from recycling
2. Was the material relevant? If no, why? yes 11 no 0
3. What would you like to have learned more about?
 - facts, stats
 - how products come back as recycled
 - better communication with employees, not just department heads
 - not sure, many topics were covered
 - better ways to get people to recycle
 - how to get the message out and how to make this important to people (but that's probably impossible)
 - not sure, many topics were covered
4. What improvements would you suggest to the training?
 - more visual presentations
 - better communication with employees, not just department heads
 - briefing on meetings with department heads
 - basic education to all employees
 - better communication between department heads, liaison, and staff
 - better attendance by all departments
5. What were the most and least useful parts of the project?
 - all was useful
 - personal interactions were useful
 - most useful – meetings and going around to departments
6. Are your colleagues more aware of the concepts of source reduction and recycling?
 - yes (7 responses)
 - yes, but quickly forget
 - yes, some are all for it, others are not "buying in"
 - at end of first few meetings, I sent an email to all department members with updates on where the team was going, our goals, and general info taken from the slide shows Linda did

Source Reduction Project Evaluation

7. Would you say that employees are taking steps to reduce and recycle?
 - most are, a few resist because they view it as a way to rebel against the management for “not addressing more important issues”
 - yes (5 responses)
 - not enough
 - people who are already motivated to recycle, already do so; those who don’t care (for one reason or another) will never be persuaded
 - to an extent; most are, some are reluctant
 - trying – need appropriate containers
 - some are – don’t know if my emphasis has changed their attitudes, but people are participating
8. Were the source reduction/recycling visits useful? yes 9 no 1
 - it puts faces and commraderie with the requests
 - for consciousness-raising
 - we made a list of items that we would like (bins, etc) but haven’t received them – need to get them to employees while they are still “excited” about process...they’ve lost interest now
 - staff very interested and enthusiastic; Linda, Barbara, and Elaine were good presenters
9. Overall, do you think this project was successful?
 - yes; it’s the process of educating, building blocks...building more
 - yes and work in progress
 - yes, made people more aware
 - great start
 - more successful than I thought it would be
 - yes (2 responses)
 - good start
 - somewhat – mixed message as to whether or not recycling really matters to the powers that be
10. What suggestions do you have for the project as it moves into the next stage?
 - keep representatives from departments involved – even if every 2-3 months
 - email updates of progress and ideas; periodic department visits – ask if materials are needed
 - need to keep employees informed
 - needs to be clear buy-in from Executive Department, Building Department, custodians, etc; doesn’t work to be pushing an agenda while we are not recycling in the building because it’s inconvenient; why should I be involved if it’s just for show? all need to put their money where their mouth is.
 - poll committee every now and then for updates and question/answer session
 - improve communication between department heads and employees
 - provide incentive program for departments
11. Other comments you would like to make....
 - THANK YOU all – thank you, Linda
 - continue with rep from each department